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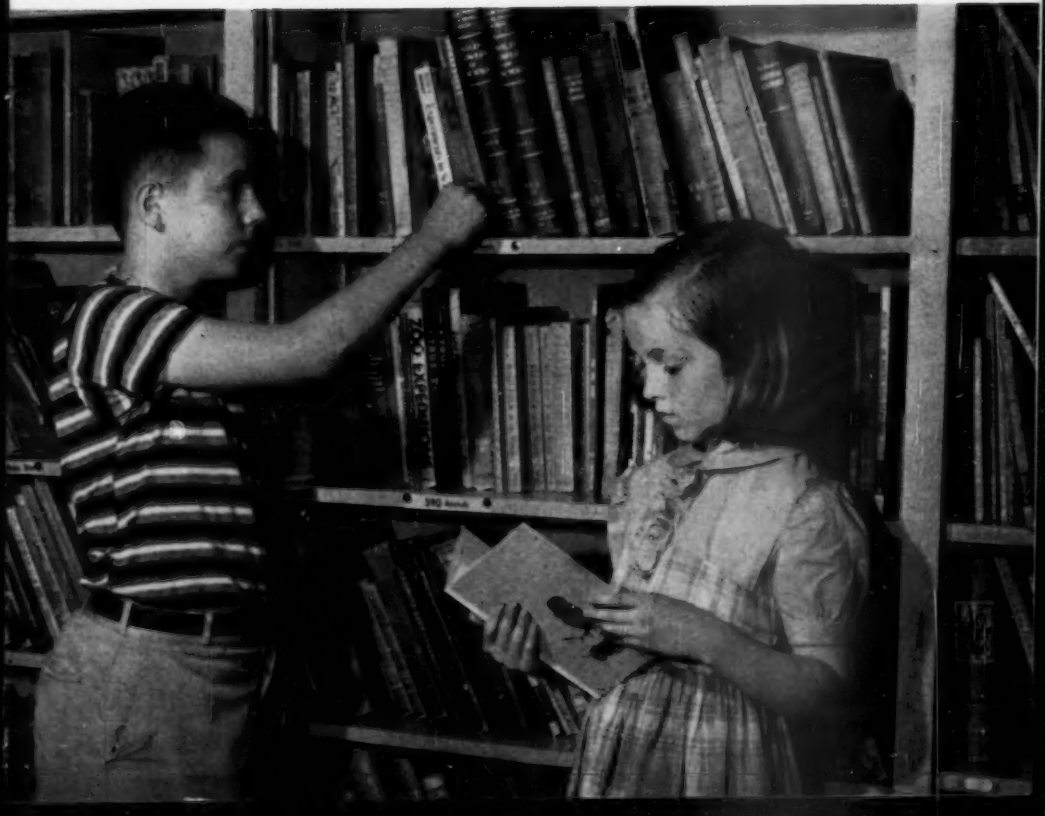
# SCIENCE BOOKS FOR CHILDREN



CORNELL RURAL SCHOOL LEAFLET

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*Cover picture by Richard B. Fischer*

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# Eva L. Gordon

by Verne N. Rockcastle

IN September of 1956 Eva Lucretia Gordon, editor of the Cornell Rural School Leaflet since 1952, became an emeritus professor, after 27 years of service in the Rural Education Department.

Professor Gordon was born in Austin, Minnesota, on June 26, 1891. She began her teaching career in 1910 in a rural school in Barron County, Wisconsin. After graduation from the Milwaukee, Wisconsin, State Normal School in 1913, she taught for seven years in Iron Mountain, Michigan, and in Racine, Wisconsin. In 1927 she came to Cornell from the public schools of Minneapolis, Minnesota, where she had been a primary grade teacher for seven years. Since 1929 she has served continuously, first as an assistant, and then as a full-time staff member in the Rural Education Department of Cornell University.

She completed a Bachelor of Science degree in 1929, a Master of Science degree in 1931, and the Doctor of Philosophy degree in 1947. A deep and special interest in children's science books provided a basis for her doctoral study—A Study Of The Evaluation of Nature and Science Literature For Children of Elementary-School Age.

As a teacher, Professor Gordon attained a unique and enviable stature. Her students were quick to recognize her superb teaching and often encouraged friends to enroll in her courses. There they not only came to know science but gained a deep and lasting appreciation for Nature and the Nature Study approach, long a tradition at Cornell. She was thus primarily responsible for the excellent teaching and the enthusiasm for science in many elementary schools.

Graduate students working under her direction have carried her skill and philosophy into many school programs throughout the country. For both these students, and those who informally sought her guidance, she

provided immeasurable understanding and encouragement. Such guidance has been rewarded, in part, by the lasting admiration of those who know her.

For more than a quarter of a century the Cornell Rural School Leaflet has absorbed a large share of Professor Gordon's time and talents. For many years she worked with Professor E. L. Palmer in the preparation of the Leaflets. Upon his retirement in 1952, she assumed full responsibility for their production, climaxing this with the Volume 50 anniversary number, "Cornell Nature Study Leaflets 1896–1956."

Professor Gordon has been honored by election to Sigma Xi, to Sigma Delta Epsilon, and to Phi Kappa Phi. In addition, she has been an active member of such national societies as The American Nature Study Society, The National Council on Elementary School Science, the National Science Teachers Association, and The American Association for the Advancement of Science. She served as vice-president and member of the Board of Directors of the American Nature Study Society.

The retirement of Professor Gordon is not an exchange of activity for inactivity. She has before her invitations to review books, to prepare critiques for publishers, to teach, and to continue writing about Nature for children and their teachers. Her home in Brooktondale provides a charming setting for such work. Her host of friends wish her continued success in her future activities.

## Forthcoming Leaflets

THE three Children's numbers of the Cornell Rural School Leaflet will appear as usual. The fall number is entitled *Fall Flowers* and will describe the fall-flowering weeds and shrubs as well as the changes that fall brings to many common plants.

The winter number, *Measurement,* is a complete revision of an earlier teachers' number, *Let's Measure Things.* Revised and rewritten by Verne Rockcastle and Robert Woodard, it will show how such qualities as distance, speed, time, temperature, and position are measured. It will describe various units of measurement, show how they are determined, and give numerous activity suggestions for learning about measurement.

The spring number, entitled *Fossils,* will be written by Verne Rockcastle and Victor Schmidt. It will describe how fossils are formed, what are some of the common fossils to be found in New York State, and how one can read in the rocks the story of ancient life.

# SCIENCE BOOKS FOR CHILDREN

by Verne N. Rockcastle and Eva L. Gordon

THIS number of the Cornell Rural School Leaflet is an annotated list of children's science books selected from those published since the last *Elementary Science Library* number of the Leaflet appeared in September, 1949. A few books, listed with annotations in *Nature Writings*, the teachers' number for 1950, are briefly noted in this Leaflet. Books published since 1950, but known to be out of print, are not included. Many books published before 1950 are still in print, or are available in school or public libraries. Some of these are excellent, but are omitted from this 1957 list because they have been reviewed in previous Leaflets.

About four hundred children's science books have been examined by the authors in preparation for this Leaflet. Limitations of space have excluded biographies, books on camping, and certain books whose content was of scant or questionable scientific value, although some of these undoubtedly are useful for supplementary or leisure reading. Also excluded are many books judged to be most useful at levels above the elementary grades or for users with special or advanced interests, and others that would be particularly valuable to develop the science aspects of studies commonly a part of citizenship education. These annotated books represent the offerings of about eighty book companies. Our sincere thanks are given to them and their editors for graciously supplying copies for examination.

The annotation that follows each title is intended to provide enough information to help in selecting books for purchase or for loan from libraries. Comments also are made when it is believed they will help materially in the use of a particular book. Of course, the books vary in their appropriateness and value, and the final judgment must rest with the teacher and the reader.

Textbook series have been omitted. Mention should be made, however, of the series of Unitexts, of the Basic Science Education Series, published by Row, Peterson and Company. Each of these 36-page booklets is devoted to a single science topic. They are readable, informative, inexpensive, and well adapted for use separately as references or activity guides.

Only books personally examined by the authors are included. Certainly some books that should have been listed were missed. Comments about books listed or omitted are welcome, so that in future teachers' numbers oversights can be corrected. Many of the books listed in this Leaflet are

in the Nature Study Office in Stone Hall, where teachers, parents, and other interested persons are invited to examine them.

Books are listed alphabetically by title, rather than by author. Within each group, books for the youngest readers are placed first. Grade or age placement data were taken from publishers' recommendations, from reviews, and from the authors' judgment. The suggestions are only approximate, since exact grade placement depends upon the individual user as well as on the manner of use.

The number of books listed under each heading gives some idea of the emphasis given by writers to any particular subject during the years 1950–57. It does not reveal the total number of books written, since the authors were forced to exclude certain "fringe-value" books as well as biographies, camping books, and textbook series.

## Subject Index

The books annotated in this Leaflet are grouped according to subjects as follows:


General Nature Study ..... pages 7 to 17

Animal Life in General ..... pages 18 to 21

Mammals ..... pages 21 to 28

Birds ..... pages 28 to 34

Reptiles, Amphibians and Fish ..... pages 34 to 38

Insects and Other Invertebrates ..... pages 39 to 44

Plant Life ..... pages 44 to 48

Earth Science ..... pages 48 to 55

Physical and Chemical Forces and Their Applications ..... pages 56 to 64

## General Nature Study

**All Around You.** By Jeanne Bendick. McGraw-Hill Book Co., New York. 1951. 48 pages. This is a very casual introduction to the physical world around a child. The topics covered include the sun and the stars, the weather, water and the soil, seeds and how plants grow from them, and a variety of animals, both fossil and living. No subject is treated in detail. Primary.

**Come to the Country.** By Grace Paull. Abelard-Schuman, Ltd., New York. 1956. Unpaged. In brief, simple, rhythmic text and colorful paintings, the author of this picture book for very young children points out some of the things "to see, and to hear, and to feel, and to smell" in the country in summer. The book is one to be enjoyed by almost any child. Primary.

**The Good Rain.** By Alice E. Goudey. Aladdin Books, New York. 1950. 32 pages. This book for five- to eight-year-olds gives a vivid picture of what the lack of rain can mean to the city child and to the country child, and of their joy and relief when rain finally comes. Illustrations in black and white or in three colors, by Nora Unwin, excellently complement the simple text. Primary.

**The Magic of Water.** By G. Warren Schloat, Jr. Charles Scribner's Sons, New York. 1955. Unpaged. In this picture story, the forms of water, how we use it, and where it comes from are described. A teakettle helps Andy study evaporation and condensation. The refrigerator helps him study freezing and thawing. A spring, a well, and a lake illustrate sources of water for drinking and washing. Finally, Andy rigs a simple water-wheel to do work for him. Primary.

**The Size Of It;** A First Book About Sizes. By Ethel S. Berkley. William R. Scott, Inc., New York. 1950. Unpaged. Little, big, long, tall, wide, narrow, short are all illustrated by reference to the commonplace things of children's environment, or things they can see or have heard about. Line drawings and monochrome sketches add to a well-written and simple presentation of dimensions for little folks. Primary.

**What Could You See?** By Jeanne Bendick. McGraw-Hill Book Co., Inc., New York. 1957. 32 pages. That the world is full of interesting things to see is the theme of this attractive book. In simple, unhurried text, the author points out that what a child might see or hear on a desert island, in a wilderness, if he were a pilot in space, or a weather observer on a high mountain or in other fascinating situations is no more wonderful than what he might see wherever he is. Illustrations in color by the author are helpful and amusing. Primary.

**Everyday Science Stories.** Edited by Rose Wyler. Julian Messner, Inc., New York. 1953; 1954. 64 pages each. In each of these fifteen small, easy-to-read volumes, a simple science concept is woven into a story which is often dramatic, sometimes forced. The science information, an integral part of the plot, is meager and sometimes distinctly subordinated to the story; hence the greatest value of the books probably lies in their use as leisure-reading material. Black and white sketches by various artists are used throughout the series. Planned for grades 1 to 4 are: *A Chimp in the Family*, by Charlotte Becker, a health story "that explains how to prevent the spread of germs;" *The Hungriest Robin*, by Peter Thayer, its theme, seasonal change and bird migration; and *Trouble at Beaver Dam*, by Florence Tchaika, which stresses the importance of wildlife conservation. Intended for grades 3 to 5 are: *Flower Box Surprise*, by Gertrude Blane, in which are presented some of the conditions necessary for plant growth; *The Marvelous Magnet*, by Harry Sootin, an amusing story which includes some information about permanent and electro-magnets; *Skinny Joins the Circus*, by Lee Bloomgarden, which brings out the essentials of a balanced diet; and *The Treasure of Greenbar Island*, by Judy Ellis, which centers around soil and its relation to plant growth. For grades 4 to 6 are: *The Brave Gives Blood*, by Philip and Miriam Eisenberg, a story with a camp setting that forms the basis for a discussion of cold- and warm-blooded animals, and of blood composition and blood types; *David's Ranch*, by Don Wilcox, which touches upon measures for flood control and for combating soil erosion; *The Flying Rangers*, by William Reiner, which concerns chiefly kites, gliders, and model airplanes and how they fly; *Herbert, the Electrical Mouse*, by Marie Bloch, which discusses the fundamentals of static and current electricity; *Oliver Becomes a Weatherman*, by Jack Bechdolt, a fantastic story that contains some facts about weather and weather forecasting; *Oliver Sounds Off*, by Jack Bechdolt, chiefly about a boy-made fire alarm; *Planet X*, by Mildred S. Kiefer, a space-conquest story; and *Trapped in the Old Mine*, by Alvena Seckar, "a health and safety story dealing with the fundamentals of ventilation." Primary, Intermediate.

**The First Book of Science Experiments.** By Rose Wyler. Franklin Watts, Inc., New York. 1952. 69 pages. With common home materials and apparatus, many simple science demonstrations are possible. Here are several activities involving air, weather, plants, electricity and magnetism, chemistry and light. Each phenomenon is described as a demonstration of what is known by the author rather than as an investigation of what is unknown by the reader. Primary, Intermediate.

**How Big Is Big?** By Herman and Nina Schneider. William R. Scott, Inc., New York. 1950 (revised edition). Unpaged. In this book, as in its predecessor, the authors first build up a concept of bigness by comparing two growing children to bigger and bigger things, finally to the stars, "the biggest things we know." Then, by another series of steps, they show "How small is small?" presenting electrons, protons, and neutrons as "the smallest things we know in all the world." Illustrations by Symeon Shimin follow the text closely, and a concluding page tells in familiar terms the actual sizes of the things mentioned. Primary, Intermediate.

**Lookout for the Forest.** By Glenn O. Blough. McGraw-Hill Book Co. Inc., New York. 1955. 48 pages. A simple story in forest conservation. Ted Riddle's father owns a large plot of forest land. Nearby is a lookout tower that Ted dreams of climbing one day. The day comes when a small fire breaks out, but is brought under control by fire-fighters. Ted realizes that the men and practices that protect the forest also protect the forest creatures that he loves. Primary, Intermediate.

**Nature Games and Activities.** By Sylvia Cassell. Harper & Brothers, New York. 87 pages. A collection of simple and interesting nature activities, including construction of bird houses, feeders, terraria, star theaters, displays of various kinds, and collections. The games are simple and active. Explanations are brief and easy to follow. The infrequent illustrations add interest to the book, if not a lot to the explanations. For all ages.

**Not Only for Ducks.** By Glenn O. Blough. McGraw-Hill Book Co., Inc., New York. 1954. 48 pages. It mattered little to Mike that the spring rains washed the streets, filled the reservoirs, made ponds for frogs and ducks, or helped the plants grow. The rain kept him from flying his kite. When his garden began to show the effects of a summer drought, however, Mike exclaimed, "It's a good thing it rains—and not only for ducks!" The book shows the importance of rain to plants and animals, to both farm and city dweller. Primary, Intermediate.

**See Through the Sea; See Through the Forest; See Through the Jungle.** All by Millicent Selsam. Harper and Brothers, New York. 1955; 1956; 1957. 48, 48, 56 pages. The first of these three attractive books deals with the concept that conditions differ at different depths of the sea, and that sea creatures are adapted to the conditions in which they live. Young readers (ages 6-8) "travel" from a beach, to "just beyond low tide," then farther out and farther down until finally they are introduced to creatures and conditions a mile down in the ocean. *See Through the Forest* is a survey "from the basement . . . to the roof, the topmost branches of the tallest trees" of a forest. It shows that each kind of plant

**The Golden Book of Science.** By Bertha M. Parker. Simon & Schuster, Inc., New York. 1956. 95 pages. In a one-page-per-subject presentation, a variety of science subjects are described in both simple text and colorful illustrations. The topics include such things as sound, light, our bodies, volcanoes, clouds, fishes, birds, insect friends and foes, electricity, and many others. A few well-chosen ideas per page, and only one page to each subject help to avoid the confusion that frequently attends books covering a wide range of subject matter. As a reference book for intermediate readers it is well done. Intermediate.

**Golden Treasury of Natural History.** By Bertha M. Parker. Simon & Schuster, Inc. New York. 1953. 216 pages. This large book deals chiefly with animals and plants, but includes sections on ancient animals, earth history, and the sun and stars. A 4-page summary of the animal kingdom is followed by concise discussions of various groups, including animals of the seashore, insects, spiders, fishes, amphibians, reptiles, birds, and mammals, and by a 10-page section on animal adaptations. The plant kingdom is similarly surveyed, and sections are devoted to food factories, trees, plants that are not green, vegetables, fruits, flowers, seeds, house plants, new plants from old, and plant adaptations. The text is clearly written and accompanied by more than 500 excellent illustrations in color. The book is a useful source of information. Intermediate.

**Hammond's Guide To Nature Hobbies.** By E. L. Jordan. C. S. Hammond and Company, Maplewood, New Jersey. 1953. 64 pages. This large profusely illustrated book is valuable for its wealth of suggestions for developing avocational interests in natural history. There are suggestions for collecting, identifying, and storing specimens of many kinds; directions for establishing and maintaining terraria and aquaria; and sections on bird hobbies and nature and wildlife photography. References to more detailed and specific information accompany each section. Illustrations include four pages in color and some photographs, but are chiefly clear, self-explanatory drawings by Herbert Pierce. Unfortunately illustrations and related text sometimes are separated by several pages, and there are occasional small errors, but the book as a whole is helpful and stimulating for nature hobbyists of all ages. Intermediate.

**How to Make a Miniature Zoo.** By Vinson Brown. Little, Brown & Co., Boston. 1957. 204 pages. Children who wish to capture and house small animals such as insects, snakes, fish, and rodents, or who wish to make a backyard bird sanctuary will find many hints in this handy volume. The directions for construction of a home zoo are somewhat grandiose, but are followed by clear, specific information on cages, food, and handling of home and school zoo pets. Intermediate.

and animal "lives at the level which is best suited to its own particular needs for food, protection, and climate," although some forest animals go up and down through the different levels; and that each living thing is affected by the others around it. *See Through the Jungle* presents a similar vertical view of a South American rain forest, with emphasis on the plants and animals that inhabit and are adapted to the various levels, each of which offers its own distinctive living conditions. Pictures in three colors, by Winifred Lubell, illustrate the different levels of sea or forest or jungle, and supply helpful details. Primary, Intermediate.

**All About the Sea.** By Ferdinand C. Lane. Random House, Inc., New York. 1953. 148 pages. This book contains a condensed, general discussion of the sea, what it is like and how it came to be; of life in the sea; and of man's relationship to the seas. The book is illustrated in two colors, by Fritz Kredel. Since it presents little specific information, it would be less helpful than some other books. Intermediate.

**Beginner's Guide to Fresh-Water Life.** By Leon A. Hausman. G. P. Putnam's Sons, New York. 1950. 122 pages. An elementary pocket guide to some of the common creatures in fresh water. (Reviewed, 1950). This small volume, like its predecessor, *Beginner's Guide to Seashore Life* (1949), is best used as an elementary reference. Intermediate.

**The Big City Book of Conservation.** By Catherine Urell, Anne Jennings, and Florence Weinberg. Follett Publishing Co., Chicago. 1956. 96 pages. A reader in elementary conservation, stressing what children can do to conserve and protect the things they use in everyday life. It is written as classroom conversation in which the children all contribute ideas toward the conservation of soil, water, wildlife, and everyday things such as paper, cloth, metals, and human resources. The text is illustrated with about two pictures per page. Few activities are described, the pupils acquiring their knowledge through vicarious experience, but this is balanced, in part, by the breadth of the topics covered. Intermediate.

**Big City Water Supply.** By Catherine Urell and Rosamunda Nonnenmacher. Follett Publishing Co., Chicago. 1953. 96 pages. A story of the travels of a glass of water from its source in the Catskills to the faucet in a New York City home. The reservoirs, aqueducts, pipes, treatment plants, and sewage systems, are described in some detail, as well as the history of their development. The water cycle is explained (roughly), and some basic ideas of water conservation are included. The New York City water supply system is compared in brief with the systems of Los Angeles, Chicago, and Philadelphia, since each has a different source. Intermediate.

section on conservation is well done and suitable for beginning readers. The rest of the book is best suited to intermediate readers. Intermediate.

**The Care of Water Pets.** By Gertrude Pels. Thomas Y. Crowell Co., New York. 1955. 116 pages. In this book for beginners, kinds of aquarium fish, their care and feeding, styles of aquaria, aquarium animals other than fish, and outdoor aquaria are described. Hints include how to breed the fish, what fish are best kept separately from others, which fish get along well together, and what plants are best for various aquaria. In spite of occasional inaccuracies, the book is a distinct help to the novice aquarist. Intermediate, Upper.

**The Community of Living Things In:** Vol. 1, *Fields and Meadow;* Vol. 2, *Fresh and Salt Water;* Vol. 3, *City Parks and Home Gardens;* Vol. 4, *Forest and Woodland;* Vol. 5, *The Desert.* By Etta S. Ress; B. Bartram Cadbury; Robert S. Lemmon; Stephen Collins; Alexander B. Klots and Elsie B. Klots. Creative Educational Society, Inc., Mankato, Minnesota. 1956. Unpaged. This 5-volume kaleidoscope of general nature study is beautifully illustrated with full-page black and white photographs of native plants and animals. Opposite each photograph is a page of text describing in generalities the organism pictured. Approximately ninety plants and animals are described in each volume. The appeal of the set is largely visual and is due to the attractive illustrations and to the striking, embossed cover. The set is a luxury item, best suited to school library use after more basic science references have been acquired. Children of many ages would enjoy browsing in these National Audubon Society sponsored books. Intermediate, Upper.

**Desert Drama.** By Iona Hiser. Abelard-Schuman, Ltd., New York. 1956. 152 pages. The outstanding plants and animals of the American Southwest are described in storylike detail by a long-time resident of the area. The first half of the book covers various cacti and their blooms. The second half describes the mammals, birds, reptiles, and arachnids. Both sections are flavored with intriguing anecdotes and good photos. This is of primary interest to vacationers, and a good reference. Intermediate, Upper.

**Experiments in Science.** By N. F. Beeler and F. M. Branley. Thomas Y. Crowell Co., New York. 1955. 138 pages. Descriptions of forty-five simple experiments in science, using common household or schoolroom equipment. The experiments include making disappearing ink, a wet-cell battery from pennies and dimes, a pinhole camera, artificial clouds, a weedless garden, and many similar activities. Diagrams accompany most of the experiments described, but the clarity of the description is adequate, in most cases, for successful completion of the experiments. Intermediate.

**In Woods and Fields; In Yards and Gardens; In Ponds and Streams.** By Margaret Waring Buck. Abingdon-Cokesbury Press, New York. 1950; 1952; 1955. 96, 96, 72 pages. The first of these three attractive books (Reviewed, 1950) contains brief, factual descriptions of some of the plants and animals to be found in woods and fields at each season of the year. Two or three paragraphs, together with a black-and-white sketch by the author, are provided for each species. A supplementary list, with sketches, of more birds, flowers, and insects of spring and summer is included. *In Yards and Gardens* is a similar collection of brief, factual sketches of selected birds, trees, flowers, insects, snakes, and mammals that may be found in and about yards and gardens. Common plants and animals found in and around fresh water are pictured and briefly described in the third book, *In Ponds and Streams*. The illustrations in all three books are black and white sketches by the author. They are sufficiently detailed to be of help in identification. Each book is indexed, scientific names of the living things discussed are listed, and there is a page in each of "More to Read." These are reference-type books, best used to introduce or to interpret the living things they present "for boys and girls and other beginning naturalists" of all ages. Intermediate.

**Outdoor Adventures.** By Hal H. Harrison. Vanguard Press, Inc., New York. 1951. 128 pages. This book, by a well-known outdoor photographer and writer, presents through-the-year adventures of Billy and Jane with nature near home. The brief, informative adventures, arranged by season, provide accurate information and suggest desirable attitudes. Read at the proper season, they might well help many readers to seek or to enjoy similar experiences. The book is illustrated with photographs by the author, in which his two children play the parts of Billy and Jane. Intermediate.

**Picture Book of the Sea.** By Jerome S. Meyer. Lothrop, Lee and Shepard Co., Inc., New York. 1956. Unpaged. An introduction to some of the wonders of the oceans: how they came to be, their saltiness, currents, mountain ranges, tides, and the plants and animals that live in them. Approximately one page is devoted to each topic, with colored sketches to enhance the text. Both physical and biological aspects of oceans are described in language and print suitable for upper grades, but with illustrations that would appeal to all levels. Intermediate.

**What Happened?** By Ida Scheib. David McKay Co., Inc., New York. 1955. 114 pages. A few news headlines that suggest science at work are used to introduce such topics as soil conservation, the states of water, refrigeration, electricity, and atomic energy. Most of the science is sound, but it is too condensed to be easily understood by the beginner. The entire approach is interesting, though, in spite of such condensation. The

develops the concepts that plants and animals (including man) are parts of a give-and-take relationship to each other and to the earth on which they live; and that the changes and disturbances of this "web of relationships" "made by the white men on this continent" have seriously affected our natural resources. A long section entitled *Conservation at Work* deals with present-day measures to use wisely and renew these resources. A discussion of *You and Conservation* points out that everyone can contribute in some way to this important work. Pleasing illustrations in two colors, by René Martin, add to the interest and value of the book. There is an index, a short glossary of conservation terms, and a brief list of other books to read. Intermediate and above.

**Freedom and Plenty: Ours to Save.** By Wilfrid S. Bronson. Harcourt, Brace & Company, New York. 1953. 124 pages. A down-to-earth approach to conservation. The conservation practices in the valley of the Muddyflow River are compared with those in the valley of the Cleargood River. The vegetation and the wildlife, as well as the inhabitants, are much more prosperous and happy in the Cleargood River valley—largely as a result of good conservation practices. The last section of the book contains recommended conservation activities for school children. Intermediate, Upper.

**Sea and Shore.** By Clarence J. Hylander. The Macmillan Co., New York. 1950. 242 pages. The first and third chapters of this introduction to seashore exploration deal with the sea as a home for plants and for animals. Chapter 2 deals with seashore plant life, and the five remaining chapters with sea animals. The information presented is clear, precise, and straightforward. Examples of the various groups of marine animals from both the Atlantic and the Pacific Coasts are described. Illustrations, in black-and-white, by the author, include clear, large-scale photographs, many small detailed drawings and occasional diagrams. There are suggestions for collecting and preserving specimens. The book would be a helpful aid for seabeach explorers of many ages. Intermediate and Upper.

**Seashores: A Golden Nature Guide.** By Herbert S. Zim and Lester Ingle. Simon & Schuster, New York. 1955. 160 pages. It is difficult to imagine a book so small with so great a range of information. As its subtitle states, it is "a guide to shells, sea plants, shore birds, and other natural features of American coasts." Over 475 marine subjects are discussed, and a list of scientific names arranged according to page of illustrations and one of additional references provide for further studies. The book is beautifully and competently illustrated in color by Dorothea and Sy Barlowe. It has proved itself an excellent guide for beginning students of seashores and seashore life, regardless of age.

**Experiments with a Microscope.** By N. F. Beeler and F. M. Branley. Thomas Y. Crowell Co., New York. 1957. 148 pages. Microscopes can be as simple as a drop of water, or as complex as an oil immersion model. Whatever the style of instrument, here are suggestions for preparing, viewing, and recording. Included are directions for fixing, mounting, and staining tissue, culturing protozoa, and growing molds. It is a handy guide and reference for the beginning microscopist. Intermediate.

**Great Adventures in Science.** By Helen Wright and Samuel Rapport. Harper & Bros., New York. 1956. 338 pages. This collection of brief adventures in science includes stories about snakes, sea-life, archaeology, the atom, aviation, the birth of a volcano, and many others. Some are written by the scientists themselves, others by their biographers. Each is a vividly accurate account of an exploit into science, written in a style that is sure to please and inform the young reader. Most of the stories are of the past two or three decades. They span a great variety of endeavors and subjects, both physical and biological. A good book for leisure or supplementary reading. Intermediate, Upper.

**The Living Desert; Vanishing Prairie; Secrets of Life.** By Jane Werner (titles 1 and 2), Rutherford Platt (title 3) and the Walt Disney staff. Simon & Schuster, Inc., New York. 1954; 1955; 1957. 122 pages each. The general effect of these books, as of the corresponding Disney movies, is good. They arouse an interest on the part of the reader that few other books can duplicate. Living things spring from the pages in stark realism and uninterrupted action. The photography is superb and the text is expertly written, although it is a little upgraded for the average elementary reader. All three volumes emphasize the unusual, however, both by condensing the time intervals between bits of action, and by selecting those plants and animals that are the most colorful or unusual in the area concerned. No area is so action-packed as the reader might assume from the text. There is good reading, however, in all three books, particularly as a followup after the movies. Intermediate, Upper.

**Famous Scientific Expeditions.** By Raymond Holden. Random House, New York. 1955. 140 pages. This is a dramatic account of five thrilling scientific expeditions—plumbing the ocean's depths with Beebe; corroborating the existence of the giant lizards of Komodo; finding and opening the ancient tomb of King Tut; the conquest of Mt. McKinley; and the arctic explorations of Stefansson. The accounts are straightforward, simply written, and unencumbered with technical details. Intermediate, Upper.

**The First Book of Conservation.** By F. C. Smith. Franklin Watts, Inc., New York. 1954. 69 pages. The first half of this clearly written book

**The Great Nutrition Puzzle.** By Dorothy Callahan and Alma S. Payne. Charles Scribner's Sons, New York. 1956. 189 pages. Where our food goes and how it nourishes our bodies is a puzzle that is centuries old and is still not completely solved. Hippocrates, the "father of medicine," had little basis for his beliefs about nutrition, but in the two centuries since Lavoisier much has been learned about proteins, fats and carbohydrates, the function of saliva and gastric juices, and the role of minerals and vitamins in our diet. This story of how scientists unlocked these nutrition puzzles is well worth reading. Upper.

**The Outdoor Guide.** By Luis M. Henderson. Stackpole & Heck, Inc., Harrisburg, Pa. 1950. 337 pages. Interesting nature study and woods lore is an integral part of these suggestions for making hiking, camping, or just being out-of-doors both pleasurable and profitable. Upper.

**Sun, Earth and Man.** By George and Eunice Bischof. Harcourt, Brace and Co., Inc., New York. 1957. 118 pages. A discussion of the dependence of all living things on energy from the sun serves as a starting point for this condensed presentation of information concerning the solar system, the universe, the earth's beginning, life before man, early man, and the earth as the home of man. The two concluding chapters are an outline of the history of conservation and a survey of conservation practices. The book is illustrated with photographs from various sources and with line drawings by Jere Donovan. Upper.

**Today's Science and You.** By Lynn Poole. McGraw-Hill Book Co., Inc., New York. 1952. 197 pages. A series of recent problems and the scientific research that led to their solution is described by a TV science producer. Problems in optics, medicine, chemistry, and atomics have produced such resulting wonders as the diffraction grating, a television X-ray machine by which doctors in different cities can examine patients simultaneously, and cameras that can photograph the earth from a high-speed rocket. Upper.

**The World We Live In.** Life Magazine staff and Jane Werner Watson. Simon & Schuster Co., New York. 1956. 211 pages. Here, in a special edition for young readers, is the Life Magazine story of our world. Beginning with the creation of the earth and its climate, and progressing through the evolution of life on the earth, the book covers in successive sections the sea, the desert, the arctic barrens, the tropical forest, the temperate woods, and extra-terrestrial space. Nearly all the illustrations are in color. As with any book that covers such a wide range of material, the text is condensed. Ideas are thus presented too rapidly for many middle-grade readers. For the advanced reader it contains a wealth of information. Upper.

**The Wonderful World of the Sea.** By James Fisher. Garden City Books, New York. 1957. 69 pages. The first two sections of this large, beautifully illustrated book deal with the sea and its waters—area, sea bottom, waves, currents, tides; and with the sea and its life—origin, evolution, and present-day groups. A third section, *The Sea Challenges Man*, is a brief history of ship-building and of man's conquest of the seas. In the final section, *Man Challenges the Sea* is a fascinating account of how man has learned about the sea and its life, and has developed better means of safety at sea. The clear, simple text shows the relationship of scientific knowledge and social development, and emphasizes that man still has much to learn in the future "when science has advanced further." Illustrations, in full color, by a group of seven artists, are sometimes supplemented by black-and-white line drawings and diagrams. The book, first printed in Great Britain, will be most useful to older readers. Intermediate, Upper.

**State Birds and Flowers.** By Olive L. Earle. William Morrow & Co., Inc., New York. 1951. 64 pages. In this well-made book, adequately illustrated by the author, the chosen birds and flowers of the 48 states and of Alaska, Hawaii and the District of Columbia are pictured and described. The information is interestingly presented and easy to grasp, although the descriptions of flowers require knowledge of flower parts. Planned for ages 10 to 14, but useful for readers of many ages. Intermediate, Upper.

**Through the Magnifying Glass.** By Julius Schwartz. McGraw-Hill Book Co., Inc., New York. 1954. 142 pages. Beginning with a discussion of lenses and how to use them, the author of this fascinating book suggests many things to see, using materials as easily available as one's fingertips, an onion, a corn husk, a spider, coins, and pictures in newspapers. The sections are short, the writing clear, the author suggests sources of materials as well as things to do, and the book is generously illustrated with helpful, engaging drawings by Jeanne Bendick. Grade 4 and above. Intermediate, Upper.

**The Treasure of Watchdog Mountain.** By Alf Evers. The Macmillan Co., New York. 1955. 74 pages. In a delightful story of the mistakes that led to the establishment of a conservation policy for the people around Watchdog Mountain, the author has woven both history and nature. The reader gets a feeling for the land and what it stands for after being skillfully led through years of over-trapping, over-cutting, forest fire and flood. *Watchdog Mountain* symbolizes much of the good and bad in conservation practice throughout the land. A fine conservation primer! Intermediate, Upper.

**The Hole in the Tree.** By Jean George. E. P. Dutton & Co., Inc., New York. 1957. Unpaged. A bark beetle starts the hole in the old apple tree where Scot and Paula love to play. A borer, a carpenter bee, a chickadee, a woodpecker, a flicker, some carpenter ants, and finally a raccoon make successive claims to the hole and each enlarges it a bit. In sketch and skillful text, the author develops an intriguing tale of a hole and how it grew. Primary, Intermediate.

**The Zoo Comes to You.** By Burr W. Leyson and Ruth Manecke. E. P. Dutton & Co., Inc., New York. 1954. 88 pages. This is a collection of stories about several of the Bronx Zoo animals. Two or three pages and a photograph are devoted to each animal. Each description is clear, accurate, and readable. A book such as this, available to children before a trip to a local zoo, would do much to increase the value of the trip. Primary, Intermediate.

**Animal Tracks.** Introduction by R. Marlin Perkins. The Stackpole Company, Harrisburg, Pa. 1954. 63 pages. This small book is not just a guide to tracks, but also contains concise descriptions of game mammals and their habits. Part I describes small game; part II, big game. Small mammals such as mice, moles, and ground squirrels are not included. No scale is indicated for the small game tracks, but the last page of Part I is a pictorial comparison of small game tracks all on the same scale. Intermediate.

**Home-Made Zoo.** By Sylvia Greenberg and Edith Raskin. David McKay Co., New York. 1952. 245 pages. This is a practical handbook on the care of common rodents, cage birds, reptiles, amphibians, and tropical fish. Specific directions include procuring, confining, caring for, feeding, and breeding the animals. A useful book for the home or school zoo. Intermediate.

**When You Go to the Zoo.** By Glenn O. Blough and Marjorie H. Campbell. McGraw-Hill Book Co., Inc., New York. 1955. 128 pages. A visit to a zoo would be a particularly exciting experience to anyone who had read this informally written book. In clear, interesting text, it tells about kinds of animals; how zoos get animals; some of the problems of providing suitable homes and care for each kind; and how and what they are fed. There are chapters on running a zoo, the zoo doctor, and finally a "Who's Who in the Zoo," in which are described and pictured some famous animals in United States zoos. Clear, large-scale photographs liberally illustrate the book. Intermediate.

**Who Lives There?** By Carroll Colby. Aladdin Books, New York. 1953. 48 pages. In this small oblong book the "nests, dens, burrows, and 'homes' " of 45 "birds, animals, insects and strange wild creatures" are

## Animal Life in General

**A Time for Sleep.** By Millicent Selsam. William R. Scott, Inc., New York. 1953. Unpaged. This book is an appealing approach to the strange ways that animals sleep or rest. Some stand, some perch, some lie down; some close their eyes, others do not or cannot; some sleep for a few minutes or hours, others for several months. The simple, direct, easy-to-read text is supplemented with frequent two-tone illustrations by Helen Ludwig. Primary.

**The True Book of Animal Babies.** By Illa Podendorf. Children's Press, Inc., Chicago. 1955. 47 pages. This is the story of many baby animals, from bats to bears to birds. Some babies must be cared for by their parents; some can take care of themselves; some change very rapidly when they are young. Primary.

**The True Book of Animals of the Sea and Shore.** By Illa Podendorf. Children's Press, Inc., Chicago. 1956. 48 pages. Sections of this book deal with marine animals with fur, with fins, with many legs, with shells, with sharp spines, and with soft bodies. The information is necessarily scant, but the book does point out the variety of sea animals in a way that young children can understand. The drawings, half in black and white and half in good color, by Chauncey Maltman, are interesting and helpful. Primary.

**The True Book of Pets.** By Illa Podendorf. Children's Press, Inc., Chicago. 1954. 47 pages. How to care for such pets as goldfish, toads, turtles, parakeets, hamsters, rabbits, cats, dogs, and some others is told briefly in this book. Some general information about the animals is included, together with two valuable pages of "things to remember" to keep pets comfortable and healthy. Illustrations, by Bill Armstrong, are in three colors. Primary.

**After the Sun Goes Down.** By Glenn O. Blough. McGraw-Hill Book Co., Inc., New York. 1956. 48 pages. A fascinating idea is presented in this attractive little book—the way of life of nocturnal creatures that live in and near woodlands, and how each is fitted for the activities it carries on. Pictures by Jeanne Bendick, in black and white or with blue and yellow added, contribute to the mood of the book. Primary, Intermediate.

**A Child's Book of Prehistoric Animals.** By Bruno Frost. Maxton Publishers, Inc., New York. 1956. Unpaged. Thirty representative prehistoric vertebrates are briefly described and well illustrated in this short book. Each page is devoted to one (occasionally two) animals. Half are illustrated in color, half in black and white. The text is limited to general remarks about size and habits of the animals. This book is probably best used as an elementary reference. Primary, Intermediate.

briefly described and illustrated. The descriptions usually present a few specific details, but often omit equally important facts. Two-color drawings, by the author, accompany each description. A page of suggestions on collecting nests and other "homes" concludes the book. Intermediate.

**Wild Folk in the Woods.** By Carroll Lane Fenton. John Day Company, New York. 1952. 127 pages. The life habits of several of the more common creatures of the eastern woods (and some of the western) are described in easy-to-read story form, with accompanying black-and-white sketches by the author. Included are the deer, the chipmunk, the white-footed mouse, the screech owl, the crow, the giant silkworm moths, the little brown bat and others. Intermediate.

**All About Strange Beasts of the Past.** By Roy Chapman Andrews. Random House, Inc., New York. 1956. 142 pages. This book about mammals of the past includes stories of the Beast of Baluchistan, the wooly rhinoceros, a mammoth, a mastodon, and other giants. A gripping description of mammals being trapped in the Los Angeles tar pits is followed by several anecdotal accounts of the author's own explorations in search of fossils. Although the author's interpretation of "strange beasts" excludes birds, reptiles, and the smaller animals, the book is fascinating and worthwhile reading. Intermediate, Upper.

**Animal Tools; Animal Clothing.** Both by George F. Mason. William Morrow & Co., Inc., New York. 1951; 1955. 96 pages each. The first of these books tells briefly how some animals use bills, feet, teeth, or tails as tools, and describes insect drills, the bee's tool kit, mosquito "surgical instruments," the spinning equipment of spiders, and other special structures of various animals. In the second book, *Animal Clothing*, are concise, factual discussions of such body coverings as hair, feathers, skin (with particular reference to amphibians, armor (lizards, shellfish, crustaceans, turtles, and fish) and insect clothing. The value of both books lies in their bringing together related information about many animals, most of them familiar and easy to observe. Helpful drawings in black and white are by the author. Intermediate and upper.

**First Aid for Pets.** By Leon F. Whitney. Vanguard Press, Inc., New York. 1954. 191 pages. Written by a well-known veterinarian, this is a guide to the handling, feeding, diagnosis and treatment of dogs and cats. Sound practices designed to keep pets healthy and happy, as well as emergency measures, are included. A diagnostic and general index precedes the text, so that the reader may locate first-aid information rapidly. Short sections on cage birds and tropical fish conclude the text. Intermediate, Upper.

**A Pet Book for Boys and Girls.** By Alfred Morgan. Charles Scribner's Sons, New York. 1951. 250 pages. There are sound, practical suggestions for the confinement, care and enjoyment of pets such as dogs, cats, hamsters, squirrels, mice, turtles, fish, and cage birds. The sections are clearly separated for easy reference. Diagrams show how to construct cages for the various animals. In addition, there are interesting descriptions of the lives and habits of the animals. This book, as others of its kind, is probably best used as a reference. Intermediate, Upper.

**Pets.** By Frances N. Chrystie. Little, Brown & Co., Boston. 1953. 260 pages. This generalized account of pets and their care emphasizes the relationship of pets to children, rather than the mechanics of cage construction, breeding and feeding, or physical characteristics and diseases. The animals in this book include dogs, cats, rodents, cage birds, fish, wild mammals, and farm animals. The few black and white sketches of the animals are only for atmosphere; they are not a necessary supplement to the text. The writing style is appealing and smooth, but the print a little small for young readers. Intermediate, Upper.

**The Book of Wild Pets.** By Clifford B. Moore. Charles T. Branford Co., Boston. 1954. 545 pages. For teachers who wish to enhance their rooms with cages, aquaria and terraria, or who wish to enliven the school grounds with feeders, bird houses, and other wildlife attractions, this is a complete and useful reference. Specific directions, many of them illustrated, are given for collecting, housing, feeding, and otherwise caring for all sorts of animals from beetles to birds. Of most use to teachers, it will also appeal to the student whose hobby is keeping live animals at home. Upper.

**Prehistoric Animals.** By Sam and Beryl Epstein. Franklin Watts, Inc., New York. 1956. 192 pages. For the advanced reader with some background, this book is packed with information. The text progresses from the Silurian to the Pleistocene describing briefly and illustrating the representative fossil animals of each period. One brief section deals with the process of evolution. The print is small, but the book can be used for reference. Upper.

## Mammals

**Gray Squirrel.** By Mary Adrian. Holiday House, Inc., New York. 1955. 46 pages. This story of Gray Squirrel and her family of five covers about a year from the time her young were born until a weasel in winter white ended her life as she sought nuts beneath the snow. Superb color sketches by Walter Ferguson add greatly to the effectiveness of the story. Of

particular interest is the mass migration of squirrels, a phenomenon that was more common in days of virgin forests than it is now. Primary.

**Milk for You.** By G. Warren Schloat, Jr. Charles Scribner's Sons, New York. 1951. 47 pages. This is the story of milk before it reaches the table. Photographs and black and white sketches with accompanying brief legends and text explain when and how cows produce milk, and what happens to the milk when it leaves the cow. It takes the reader through a processing plant, where the milk is pasteurized and bottled, and follows the bottle to the house where Andy and Warren live. There is an interesting section on the processes *inside* the cow, in addition to all that goes on outside. Primary.

**What's Inside of Me?** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1952. 32 pages. This brief, elementary physiology is designed to be used by parents and children together. Simply written text, printed in large type and planned for reading by children from age 7 on, alternates with more difficult material, in smaller type, to be read aloud and explained by parents (or teachers). Clear illustrations in color by Herschel Wartik supplement the text. Primary.

**Your Pony's Trek Around the World.** By Paul Brown. Charles Scribner's Sons, New York. 1956. Unpaged. A Shetland pony tells the story of horses—of how they began as Eohippus in Wyoming, migrated northwestward into Asia, then into Europe and Africa, evolving gradually into the various kinds we know today. The pony tells of zebras, quaggas, wild asses, and even Man o' War—all descendants of the original stock of our western plains. An account of how man has developed horses for use in exploration, trade, war, peace and sport concludes the book. Beautifully illustrated by the author, the book describes simply and briefly how today's horses developed by both natural and artificial selection. Primary.

**Cats.** By Wilfrid S. Bronson. Harcourt, Brace and Co., Inc., New York. 1950. 76 pages. This informative book illustrated by the author will be useful and amusing for cat owners of any age, with its discussions of the nature, the habits, and the anatomy of cats. Included are helpful advice on care and feeding, and descriptions of various kinds of cats. Primary, Intermediate.

**Cottontail Rabbit.** By Elizabeth and Charles Schwartz. Holiday House, Inc., New York. 1957. 46 pages. This is the story of a cottontail rabbit, told simply, clearly, and without sentimentality. It tells how she raised her young, what dangers she met and how she met them, what problems she had (including fleas), and what food she ate. The authors bring out the high reproduction rate of the cottontail as a compensation for losses to

predators. They also describe some of the predators. The story is beautifully illustrated in two-tone sketches by Charles Schwartz. For a life story of one of our commonest rodents it is unexcelled. Primary, Intermediate.

**Charlie Cottontail; Freddy Fox Squirrel; Willie Whitetail.** By R. W. Eschmeyer. Fisherman Press, Inc., Oxford, Ohio. 1953; 1952; 1953. 50, 48, 49 pages. *Charlie Cottontail* provides an introduction to tagging as a means of learning something about the habits of rabbits. The sampling process by means of live trapping is simply and effectively described as a conservation technique. *Freddy Fox Squirrel* is a story of the harvesting of a crop of squirrels to keep the population healthy. It, too, is a lesson in good conservation practice. To let live is not always the wisest practice. *Willie Whitetail* brings out the fact that to let all the deer live is to invite starvation of many. In deer, as in many plant crops, harvest is an important control method. Because of controlled hunting, Willie grows up to be a big, handsome buck. Primary, Intermediate.

**Major; The Story of a Black Bear.** By Robert M. McClung. William Morrow and Co., Inc., New York. 1956. 64 pages. Major and his sister were born on a winter day, in a warm den under the roots of a dead tree. In accurate detail, their story tells how the tiny cubs grew, and describes their experiences through most of their first two years. From then on, the story is Major's, ending with his finding a mate. The illustrations are black and white drawings by the author. Primary, Intermediate.

**Mice at Home and Afield.** By Olive L. Earle. William Morrow and Co., Inc., New York. 1957. 64 pages. This instructive book contains much interesting information about many kinds of mice—house mice, harvest mice, deer mice and some of their relatives, jumping mice, pocket mice, voles, and others. Their physical characteristics, nests, foods, habitats, and enemies are briefly and clearly discussed in the text, which is beautifully supplemented by charming, accurate illustrations in black and white, by the author. Primary, Intermediate.

**Spike; The Story of a Whitetail Deer.** By Robert M. McClung. William Morrow and Co., Inc., New York. 1952. 64 pages. This story tells of the life of Spike from the June day of his birth until the following June. Spike's growth, the way of life of deer, when and on what they feed, the dangers they face (including the winter peril of starvation), and the plants and animals of their woodland home are vividly described. Attractive drawings in black and white are by the author. Primary, Intermediate.

**Stripe; The Story of a Chipmunk.** By Robert M. McClung. William Morrow and Co., Inc., New York. 1951. 64 pages. Stripe was not much

bigger than a bumblebee when he was born, but he grew rapidly, and when he was six weeks old he was ready for life outside his mother's burrow. This story describes his life during his first summer and fall—the foods he ate, the dangers he met, the digging of his first burrow, and his storing of food for winter use. When he reappeared after his winter retirement in his burrow, he was a fullgrown chipmunk, and it was spring again. The excellent pictures, many of them in color, are by the author. Primary, Intermediate.

**Bats.** By Charles L. Ripper. William Morrow and Co., Inc., New York. 1954. 64 pages. The lives and habits of bats, as well as some peculiar species characteristics, are described in this book. It tells how bats use supersonic sounds to guide them; how they eat; how they hibernate; and how they reproduce. In addition to describing various bats from the little brown bat to the giant "flying fox", it also dispels the myths about bats getting into a person's hair, and about their lousiness. The text is supplemented with frequent, clear sketches by the author. An excellent introduction to our flying mammals. Intermediate.

**Golden Hamsters.** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1951. 63 pages. This is essentially a book on the care and raising of the golden hamster. It tells about the discovery of the hamster in Syria, its introduction into this country as a laboratory animal, and about the handling of caged hamsters. Directions for making cages, feeding, and breeding the animals are given. Finally, there is a good section on the problem of too many hamsters and on the inadvisability of releasing them. It is pointed out that the consequences of such release could rival the problem of the rabbit in Australia or the house sparrow in this country. The book is well illustrated with sketches by Herschel Wartik. Intermediate.

**The Great Whales.** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1951. Unpaged. This book tells of the extinct ancestors of the great whales, and of the whales' adaptations to life in the sea. It tells why the limbs are modified as they are, how the whale is fitted for diving deep and staying long underwater, and how the mouths are constructed to feed on small sea life. Frequent sketches by James Irving illustrate the text. A brief description of the international controls placed on whaling to prevent the extinction of these giant mammals concludes the text. Intermediate.

**Horses and Their Ancestors.** By William A. Burns. McGraw-Hill Book Co., Inc., New York. 1954. 61 pages. Besides an account of how today's horses came from the first horses, this fascinating book tells of the many ways horses influenced jobs, art, music, and mythology. Also described

are the various breeds of horses and near-horses; the role of horses in war; police horses; work horses of today and long ago; and horses developed for sport and for show. The concluding section on horses in story and art even describes their influence on everyday expressions such as "changing horses in mid-stream." The illustrations by Paula Hutchison add both atmosphere and meaning to the well-written text. Intermediate.

**Lone Muskrat.** By Glen Rounds. Holiday House, Inc., New York. 1953. 124 pages. Old Muskrat, driven from his colony by a forest fire, travels far away to a new pond where he makes a home. Life in the new pond is fraught with dangers from an owl, a weasel, an eagle, and a bobcat. The final challenge to Old Muskrat comes from another muskrat, but Old Muskrat succeeds in driving the younger one away and is once again master of the pond. His food, forays, and fights are described in an interesting text, implemented with ink sketches by the author. Intermediate.

**Our Senses and How They Work.** By Herbert S. Zim. William Morrow & Co., Inc., New York. 1956. 64 pages. The physiology of each of the five senses is briefly described in text, and illustrated with line drawings by Herschel Wartik. The text is simply written, in large print, but with a large number of major ideas per page. Most of the drawings are clear and simple, but some of the cross-sections require more background for interpretation than is characteristic of the readers for whom the text is intended. Intermediate.

**Paws, Hoofs, and Flippers.** By Olive L. Earle. William Morrow and Co., Inc., New York. 1954. 199 pages. The class Mammalia is divided into several orders based on anatomical characteristics. In this book the major emphasis is on the differences in the feet of members of different orders —whether they have claws, hoofs, flippers, or nails. Other anatomical features, as well as the life habits, of several members of each order are also described. The largely factual text is not limited to native American mammals, but makes frequent reference to exotic species such as the platypus, the echidna, the hyrax, and others. Black and white sketches by the author help to identify the animals and to draw attention to the differing pedal structures. Intermediate.

**Seals and Walruses.** By Louis Darling. William Morrow and Co., Inc., New York. 1955. 63 pages. Here in illustrated, concise form is a particularly clear and complete presentation of the lives and economic importance of seals and walruses. Anatomical differences between these flippered animals and the toed animals are described in detail. The life histories of the northern fur seal and of the walrus are lucidly presented, including mating, rearing of the young, feeding, and enemies. Other

species of seals and walruses are more briefly described. The story contrasts the early massacres of the fur seals with present-day international efforts to conserve these fast-disappearing animals. Excellent illustrations in black and white, by the author, add much to the text. Intermediate.

**All About Whales.** By Roy C. Andrews. Random House, Inc., New York. 1954. 144 pages. As an observer and participant in several whaling adventures, the author is on firm ground in describing the suspense and action of whaling. He describes several whales such as the finback, the humpback, the sulfurbottom, the sei, the sperm, and the rare gray whale. Their habits, the methods of hunting and killing them, the "cutting-in" process, and the risks involved in whaling are recorded in easy-to-read fashion. Thomas Voter's monochrome illustrations help to identify the whales and add color to the already exciting text. Intermediate, Upper.

**Mammals.** By Herbert S. Zim and Donald F. Hoffmeister. Simon & Schuster, Inc., New York. 1955. 156 pages. This book, another of the Golden Nature Guide series, contains an amazing amount of information. A general introduction explains what mammals are, and tells where they are found, and how to study them. On each page of the major part of the book is a colored illustration of an animal, a distribution map, and brief text describing the animal and its habits. Many pages have additional colored illustrations to emphasize special characteristics. The book covers all the important North American mammals from shrews to whales. An excellent small reference, particularly for the illustrations. Intermediate, Upper.

**Masked Prowler.** By John and Jean George. E. P. Dutton and Co., Inc., New York. 1950. 183 pages. Another in the Georges' series about mammals, this is the story of Procyon, the raccoon. It tells of his birth in a Michigan forest, his early wanderings about the woods and nearby streams, his escapes from poachers and dogs, and about his mate, Lotor, and their offspring. In a smoothly written and warmly interesting story the reader follows Procyon from adventure to adventure. Corvus the crow, Otus the screech owl, and Vulpes the fox, are bit players in the cast of woodland creatures. Black and white sketches by Jean George provide atmosphere for the text. Intermediate, Upper.

**Our Wonderful Eyes.** By John Perry. McGraw-Hill Book Co., Inc., New York. 1955. 156 pages. Brief, clear explanations and intriguing but simple experiments are combined to demonstrate how our eyes work and why we see what we do. Beginning with a section describing the importance of our eyes, there follow an explanation of the role of light, the structure of the eye and the retina, and the nerve pathways to the brain. Following this are many simple graphic demonstrations and experiments

to show parallax, binocular vision, image retention, accommodation, and optical illusions. Finally there are suggestions for taking care of our eyes. The black and white sketches by Jeanne Bendick nicely explain and amplify the text, although several of them are too small to be helpful. Intermediate, Upper.

**How Your Body Works.** By Herman and Nina Schneider. William R. Scott, Inc., New York. 1949. 160 pages. Such body functions as digestion, circulation, and excretion, as well as the physiology of the five senses, are described in simply written text, but probably the outstanding feature of this book is the number of simple experiments that supplement the descriptions. They show simply and effectively how various organs function. Some of the line drawings by Barbara Ivins amplify the text; others are chiefly decorative. A good reference and activity book about the human body. Intermediate.

**The Story of People.** By May Edel. Little, Brown, and Co., Boston. 1953. 190 pages. Have you ever wondered whether a Negro, or an Indian, or a Japanese is really different from you inside? Have you wondered how strange rituals developed among the people of Africa, Malaya, or even among our own American Indians? By sharing with her young readers the history and family life of Eskimos, African natives, and Indians, the author makes clear that basically all men are brothers, that "other people's ways, very different from our own, have dignity and value." An excellent introduction to anthropology. Intermediate, Upper.

**The Wonders of the Human Body.** By Anthony Ravielli. The Viking Press, New York. 1954. 125 pages. Your body is a machine of many intricate parts all working together smoothly and efficiently. By means of many excellent anatomical sketches and accompanying explanations the skeleton, muscles, brain, blood and digestive organs of a boy or girl are well described. Here are the answers to many of the "what's inside me" questions. The artistic and appealing sketches that support the straightforward and informative text make this one of the outstanding books to date on this subject. Intermediate, Upper.

**Animals in Fur.** By Clarence J. Hylander. The Macmillan Co., New York. 1956. 206 pages. Concise "biographies" of many kinds of American mammals occupy the greater part of this book, which has as its purpose acquainting the reader with the diversity of form and habit by which each animal is adapted to its particular living conditions. A chapter of definitions and general information, one which deals with homes, home ranges, family life, and life in winter, a good list of helpful books for further study, and an index in the form of a list of common and scientific names of the animals considered, arranged according to family, complete

tions such as the woodpecker's tongue and the swallow's flight ability, and how and where each kind of bird spends the winter. Attractive drawings in three colors enhance each book, those in *Downy Woodpecker* by Barbara Latham, and those in *Barn Swallow* by Walter Ferguson. Excellent informational reading. Primary.

**Lullaby for Eggs.** By Betty Bridgman. The Macmillan Co., New York. 1955. Unpaged. A poem about the eggs of birds is illustrated for the young reader. The phrases describing the kinds of eggs ("... on a cliff in each of a thousand holes, in backyard boxes on slender poles ...") are one on a page, with an artful illustration opposite. Primary.

**The True Book of Birds We Know.** By Margaret Friskey. Children's Press, Chicago. 1954. 47 pages. The brief, simply written text of this little book points out that while "birds are alike in many ways," they "have different ways of doing things," and each "has the tools it needs for the way it lives." Sections on perching birds, climbing birds, scratchers, night-fliers, and running, wading, swimming, and diving birds illustrate these statements. Illustrations include nine colored plates by Anna Pistorius and many small black-and-white drawings. Primary.

**Walt Disney's Water Birds.** Story adapted from the Walt Disney True-Life Adventure Motion Picture, *Water Birds.* Albert Whitman and Co., Chicago. 1955. 28 pages. Brief text and full-color pictures by Marjorie Hartwell bring out the special ways of food-getting of about a dozen kinds of birds, some of them marine, others of fresh waters. Primary.

**Woody, The Little Wood Duck.** By Ivah Green and Alice Bromwell. Abelard-Schuman, Inc., New York. 1955. 64 pages. Into this simply told story of a duckling Grandpa found in the driveway are woven many facts about the beautiful but little-known wood duck. Grandpa and Grandma, with the eager help of the children in the neighborhood, kept the duckling as a pet through his first summer and winter. When spring came he was banded and freed (by the Conservation Officer) in a nearby lake "where he really belonged." The accurate, large-scale black-and-white drawings are by George F. Mason. Primary.

**The Wonderful Egg.** By G. Warren Schloat, Jr. Charles Scribner's Sons, New York. 1952. 52 pages. This large photographic picture-book shows how chicks are hatched from eggs by hens or in incubators, what happens inside the egg, and how the baby chicks are fed and cared for during the first six months of their lives. The two final chapters deal with the production of "eggs for you to eat," and some ways to cook eggs. The numerous clear, large-scale photographs are noteworthy, particularly the series that shows a chick coming out of the egg. A series of black-and-white drawings shows development within the egg. Primary.

this useful reference. The black and white illustrations are excellent photographs and clear, helpful drawings. Upper.

**Growing Up.** By Karl de Schweinitz. The Macmillan Co., New York. 1953. 73 pages. This book is a revised edition of a 1928 volume by the same title. As its subtitle implies, it tells "the story of how we become alive, are born, and grow up." It is newly illustrated with photographs, supplemented by halftone reproductions of several useful drawings and diagrams. Although simply and clearly written, the book probably is best suited for use by parents, with their children. Upper.

**The Story of Our Ancestors.** By May Edel. Little, Brown and Co., Boston. 1955. 199 pages. How scientists are gradually working out the story of man's ancient past is the subject of this smoothly written, exceedingly interesting book. The author describes the fossil discoveries that have furnished clues, and the careful, patient study that has interpreted these clues and built our present knowledge, still incomplete but growing bit by bit through the efforts of many workers. Mrs. Edel is an anthropologist, and combines extensive study and research with an ability to make her subject fascinating and entirely understandable to readers not trained in her field. The striking black and white illustrations by Herbert Danska are decorative as well as explanatory of the text. The book is a well-indexed source of up-to-date information, useful also for reference. Upper.

**You and Your Senses.** By Leo Schneider. Harcourt, Brace and Co., Inc., New York. 1956. 132 pages. In this book the mechanics of each of the five senses is explained in text, in line drawings by Gustav Schrotter, and in some fascinating simple experiments for the reader. The section on the eye is the longest. It covers binocular vision, optical accommodation, eye defects and how they are corrected, and color vision. Most of the text is written in simple, direct style, but certain somewhat technical parts will challenge the more advanced readers. A section on "senses within the body" concludes the text. This is a fine reference carefully indexed for classroom or library use. Upper.

## Birds

**Downy Woodpecker; Barn Swallow.** By Paul M. Sears. Holiday House, Inc., New York. 1953; 1955. 44, 46 pages. In these easy-to-read little books are matter-of-fact accounts of one year in the life of each of these well-known birds. Described are such subjects as courtship, nest-building, hatching and care of the young, foods and food-getting, special adapta-

**Thunder Wings; The Story of a Ruffed Grouse.** By Olive L. Earle. William Morrow and Co., Inc., New York. 1951. 48 pages. This accurate, easy-to-read story describes the life of Little Ruff from the time he hatched from one of the eleven creamy-brown eggs in Mother Ruffed Grouse's nest until the beginning of his own family the following spring. Much information about the way of life of ruffed grouse is woven into the story. The intriguing black and white drawings by the author follow the passing months beautifully as well as contribute largely to the informational value of the book. Primary, Intermediate.

**Vulcan; The Story of a Bald Eagle.** By Robert M. McClung. William Morrow and Co., Inc., New York. 1955. 64 pages. Vulcan and his sister began life in a bulky nest in an ancient pine tree in the northern wilderness. His story is a simple, authentic description of his growth and activities from his hatching until, when he was twenty-three, he lost his mate of many years, was caught accidentally in a trap, was rescued and cared for by friendly humans, and finally freed to resume his own wild life. Lloyd Sanford's distinguished black and white drawings on every page add greatly to the author's picture of this magnificent but increasingly rare American bird. Primary, Intermediate.

**Beginner's Guide to Attracting Birds.** By Leon A. Hausman. G. P. Putnam's Sons, New York. 1951. 127 pages. This practical little book tells how to attract winter birds, how to build feeding stations, bird houses and other shelters, how to provide water for bathing and drinking, and what plantings will attract birds. Other features are discussions of the problem of cats and other undesirable visitors, of bird-banding, and of feeding summer birds. A key to birds most commonly seen at eastern American feeding stations is included. The book is an easy-to-read reference, helpfully illustrated with pen and ink sketches by Jackson M. Abbott and the author. Intermediate.

**Bob White; Mac Mallard; Woody Woodcock.** By R. W. Eschmeyer. Fisherman Press, Inc., Oxford, Ohio. 1952; 1953; 1953. 50 pages each. The stories told in these three books, like others by the same author, are built around good conservation practices and the reasons for them. Bob White spent his life on a farm where a conservation-minded owner had planned for sufficient food and cover for the quail family, but where controlled hunting permitted harvest and still provided for a future quail population. Mac Mallard was hatched in a wildlife refuge to which his parents had moved after a mid-west farmer had drained the pond on which they had lived. Mac's first summer, his migration, and his return to the refuge to father his own brood of ducklings provide opportunity for comments and advice on the conservation of waterfowl. The story of

**Owls.** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1950. 64 pages. (Reviewed, 1950). This is a fascinating little book, packed with clear, accurate, interesting information. The detailed, attractive pictures in black and white, on every page, are by James Gordon Irving, as are the endpaper drawings of twelve species of American owls, each with a small range map. Primary, Intermediate, Upper.

**Penguins.** By Louis Darling. William Morrow and Co., Inc., New York. 1956. 64 pages. Like other books by Louis Darling, this story of penguins is packed with fascinating simply told information. Nearly half of its pages are devoted to the life history of the Adelie penguins. The following few pages deal with the others of the seventeen species of penguins, contrasting their physical characteristics, habits, and distribution with those of the Adelie penguins. The latter pages contain a highly interesting discussion of the special adaptations of penguins, and of their play, their food, and their enemies. Beautiful pictures in black-and-white, by the author, add much to the value of the book. Primary, Intermediate.

**Robins in the Garden.** By Olive L. Earle. William Morrow and Co., Inc., New York. 1953. 64 pages. Many little children have enjoyed this well-told story of a robin family. It began on a cold March day when the first robin of the year appeared in the garden, hungry and uncomfortable. It tells how he discovered a feeding station, chose the garden as his territory, and found a mate; how the mate built her nest; about the four eggs and the young birds that grew up in the garden in spite of cats and other difficulties; and about the autumn departure southward of all but Father Robin—he stayed in the garden. The text and the skillful drawings by the author combine beautifully to show the changing events in the lives of the robins and the day-by-day changes in their garden. Primary, Intermediate.

**Ruby Throat; The Story of a Hummingbird.** By Robert M. McClung. William Morrow and Co., Inc., New York. 1950. 48 pages. This is a gracefully-written, accurate life history of the ruby-throated hummingbird, attractively illustrated with drawings by the author, some in black and white and some with red and green added. Primary, Intermediate.

**The Swans of Willow Pond.** By Olive L. Earle. William Morrow and Co., Inc., New York. 1955. 64 pages. One fall day a young male swan (a cob) who had lived all his life in a lake in a park flew away with a flock of wild swans. After a winter in a salt marsh, the cob and his mate flew northward to Willow Pond. Their nest and the changing activities of the five cygnets, all are interestingly described. A pleasant informational story for leisure reading. Primary, Intermediate.

**Bubo The Great Horned Owl; Dipper of Copper Creek.** By John and Jean George. E. P. Dutton and Co., Inc., New York. 1954; 1956. 184 pages each. The first of these dramatically real stories tells of Bubo and his mate, Black Talon. Crows and hunters had foiled their early attempts to raise young. Finally, after several years, two owlets were hatched in the hollow of an old elm. Before they left the nest Black Talon succumbed to the rigors of the woods. Bubo was left alone when the young he had watched over departed to territories of their own. *Dipper of Copper Creek* is, in part, the story of a young boy who discovered the fascination of wild living things when he went to spend a summer with his prospector grandfather in a ghost town high in the Colorado Rockies; but even more it is the story of water ouzels, particularly Cinclus and his mate, Teeter, and of the other wild creatures whose lives touched theirs. Both are attractively illustrated by Jean George. Intermediate, Upper.

**Chickens and How To Raise Them.** By Louis Darling. William Morrow and Co., Inc., New York. 1955. 64 pages. This book is a practical guide to successful chicken-raising, with clear, concise suggestions on how to start, and the proper housing, feeding, and care of chickens of different ages. A long section deals with raising chickens from eggs, including a straightforward discussion of the fertilization of eggs, the development of the chick, its hatching, and its early life. Much general information is woven into the text, such as the relationship of domestic chickens to wild birds, the changes brought about by selective breeding, and even a chicken-raiser's responsibility to his birds. The helpful and decorative illustrations are black and white drawings and diagrams by the author. Intermediate, Upper.

**Greenhead.** By Louis Darling. William Morrow and Co., Inc., New York. 1954. 96 pages. Into this superb story of a mallard duck and his family is woven a wealth of information about birds in general and about waterfowl in particular. Besides a detailed description of the life of Greenhead and his family from nesting time of one year until the flight north the following spring, there are discussions of these birds' specialization for flight, their food and its digestion, their keen sight, molting, feather structure and growth, the mechanics of hatching, care of the young, enemies and dangers, and migrations. Comparisons of mallards with other waterfowl and with other kinds of birds are frequent. There is an informative discussion of bird-banding, and of the conservation measures which protect these and other birds. Beautiful black and white drawings by the author illustrate every page, the decorative endpapers portray several species of wildfowl, and there is a frontispiece in full color, of mallards in flight. Intermediate, Upper.

Woody Woodcock covers the first year of his life and is the setting for an appeal for good sportsmanship and good hunter-farmer relationship. Intermediate.

**Parrakeets.** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1953. 64 pages. Although this attractive book is essentially a guide to the housing, care, and breeding of these increasingly popular cage birds, it contains much interesting information about them. Discovered in Australia about 1805, these shell parrakeets or budgerigars soon became favorite pets in many countries. Supported by fascinating black and white drawings by Larry Kettelkamp, the clear, easy-to-read text describes parrakeet habits and abilities, tells how to train the birds, and shows how to distinguish males from females and old from young birds. Intermediate.

**All About Birds.** By Robert S. Lemmon. Random House, Inc., New York. 1955. 142 pages. Much information about birds and their ways is contained in this easy-to-read survey of the bird world. It tells of Archaeopteryx, the most ancient bird, and of the slow changes that have produced present-day birds. In it are discussions of protective coloration, the wonders of feathers, the mechanics of flight, adaptations for swimming and other special abilities, migrations, foods and food-getting, eggs, nests, and the rearing of young. Concluding sections are devoted to attracting birds and to sound suggestions for helping the "wild bird that's out of luck." The illustrations by Fritz Kredel are helpful line drawings in black and white with touches of green. Intermediate, Upper.

**Birds.** By Herbert S. Zim and Ira N. Gabrielson. Simon and Schuster, Inc., New York. 1956. 160 pages. This revised edition of a "guide to the most familiar American birds" contains ten more pages of information than did its predecessor of 1949, and also a listing of scientific names. The full-color pictures by James Gordon Irving illustrate 125 kinds of birds, and with the text descriptions of similar and related species make possible the identification of 250 kinds of birds. Like others of its series, this information-packed guide will prove a useful reference, especially for beginners. Intermediate, Upper.

**Birds and Their Nests.** By Olive L. Earle. William Morrow and Co., Inc., New York. 1952. 64 pages. Nests of 42 species of birds are presented in this useful book. Accompanying text tells where each nest is built, and describes it, its maker, and the eggs it holds. Most of the birds nest in some part of the United States, but a few particularly interesting foreign nest-makers are included. Charming sketches in black and white, by the author, show each type of nest, usually its maker, and often the young birds. Intermediate, Upper.

**Bufo The Story of a Toad.** By Robert M. McClung. William Morrow and Co., Inc., New York. 1954. 48 pages. This is the story of the first three years in the life of a toad. Much of the book describes Bufo's life on land—his narrow escapes and his insatiable appetite. When he emerged from the third winter's hibernation, he hopped across the pasture to join the mating chorus of the other males. The simple text is freely illustrated by the author's appealing sketches and color drawings. Primary.

**Frogs and Polliwogs.** By Dorothy C. Hogner. Thomas Y. Crowell Co., New York. 1956. 63 pages. In this smoothly written and easy-to-read text are included the distribution, the anatomy, and the life history of a typical frog; the life history of a toad; descriptions of some common frogs and toads, as well as some peculiar foreign species; and directions for caging and caring for pet frogs and toads. The text is accurate, and descriptive rather than factual. The illustrations by Nils Hogner do not adequately supplement species descriptions. The book is best used as a general information reader. Primary.

**Leaper The Story of an Atlantic Salmon.** By Robert M. McClung. William Morrow and Co., Inc., New York. 1957. 64 pages. The changes in Leaper's size and appearance from the time he hatched until after his first breeding season are clearly brought out in this story. There is reference to the work of conservation agencies of the government. Leaper's life is a struggle against the enemies of all growing salmon but in spite of all the hazards, Leaper finally returns to his place of birth to fertilize a nest of eggs. The straightforward text is appealingly illustrated with large wash drawings by the author. Primary.

**Tree Frog.** By Paul M. Sears. Holiday House, New York. 1954. 46 pages. Tree Frog moved out of his hollow in the elm and toward a pond where other tree frogs were calling. The spring mating left clumps of eggs here and there in the pond, one of the eggs becoming the tiny new tree frog tadpole that a few weeks later left the water to search for insects. Several molts and many insect meals later she was ready to spend the coming winter, as Tree Frog had spent the preceding one, hibernating in some protective hollow. A short section on how to keep a pet tree frog concludes the book. Colored sketches by Barbara Latham provide attractive, although somewhat grotesque, supplements to the text. Primary.

**The True Book of Dinosaurs.** By Mary Lou Clark. Children's Press, Inc., Chicago. 1955. 47 pages. In this small book with large print are brief facts about a few of the better known dinosaurs, illustrated with black and white sketches by Chauncey Maltman. A brief section on the mammals that appeared after the dinosaurs and one on the fossil evidences of the larger vertebrate animals concludes the book. Teachers will un-

**A Home for Woody.** By Ivah Green. Abelard-Schuman, Inc., New York. 1956. 96 pages. The first seven chapters of this book present the story of a pair of wood ducks that spent two summers on a small woodland lake. The story includes an informative section on bird banding. In chapter 8 is a history of the decrease in wood ducks in the United States, and of the conservation measures that have prevented their extinction. A chapter on types of nest boxes for wood ducks and directions for making them concludes the book. Illustrations are interesting photographs and clear diagrams. Intermediate, Upper.

**Hawks.** By Charles L. Ripper. William Morrow and Co., Inc., New York. 1956. 64 pages. Why are hawks the hunting kings of the bird world? Their wings are well adapted for soaring on the air currents. Their talons are long and curved and equipped with strong tendons for holding prey. Their eyes are like miniature binoculars; they can see a mouse in the grass at an unbelievable distance. Few hawks deserve the ill reputation that some persons have assigned them. In this well-written volume, beautifully illustrated by the author, are found some fascinating insights into the lives of our common hawks—their physical features, nesting, hunting, and migration. Intermediate, Upper.

**Wonders of the Bird World.** By Helen G. Cruickshank. Dodd, Mead and Co., Inc., New York. 1956. 95 pages. An elementary reference and textbook on birds and their ways. The feathers, the flight, the bills and the feet, the feeding habits, and the family life of birds in general, and of specific families of birds, are described by Mrs. Cruickshank, and illustrated by photographs taken by her famous husband. Bird conservation is frequently introduced, and is illustrated by stories of what happened to the passenger pigeon and heath hen, and what is being done to encourage and conserve other depleted bird populations. Intermediate, Upper.

## Reptiles, Amphibians, and Fish

**Alligators and Crocodiles.** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1952. 63 pages. One species of alligator and two species of crocodile, remnants of an ancient order, live in the United States. The life habits, distribution, and history of these reptiles is summarized in this simple text that is profusely illustrated by James Irving. The alligator is described in more detail than the less common crocodile. The young reader will find this easy to read, interesting, and generally accurate. Primary.

doubtedly wish to supplement this brief text by reading aloud from others. Primary.

**The True Book of Reptiles.** By Lois Ballard. Children's Press, Inc., Chicago. 1957. 47 pages. Each page of this colorful picture book states a few simple facts about the reptile that is illustrated. Except that alligators and crocodiles are *not* lizards, the text seems factually correct. The print is large, the sentences short, and the illustrations by Irma Wilde alternate black and white with color. The choice of snakes and lizards covers a wide geographical area, but the most common turtle of New York State is omitted. Primary.

**Al Alligator; Billy Bass; Bobby Bluegill; Tommy Trout.** By R. W. Eschmeyer. Fisherman Press, Inc., Oxford, Ohio. 1953; 1951; 1953; 1951. 49, 46, 47, and 48 pages. *Al Alligator*, an Okefenokee alligator, survives many hazards under protection by the government and lives out his life in the serenity of the swamp. The story is humanized, but makes a plea for conservation. *Billy Bass*, one of several thousand born in a mid-western lake, survives the dangers that beset young fish, and grows to be the biggest bass in the lake. The conservation inserts are not so polished in this book as they are in others of the series. *Bobby Bluegill* is one of thousands of tiny bluegills in a farm pond that also contains large-mouth bass. The book describes the conservation practices that limit the bluegills and restore the bass population to a healthy level. *Tommy Trout* is another approach to conservation. He leaves North Creek when a passing fisherman carelessly starts a forest fire. Finding better surroundings in East Branch, he lives to a ripe old age and is finally caught by Jimmy Webb. The print size in all these books is small, but the style is easy to follow. Good conservation practices are the keynote in all four books. Primary, Intermediate.

**All About Snakes.** By Bessie M. Hecht. Random House, New York. 1956. 139 pages. This is a generalized account of the anatomy, life history, and distribution of some of the better known snakes. Old World as well as New World species, both poisonous and non-poisonous, are described. For a book intended for American youngsters, there is too much emphasis on poisonous snakes, although this subject is of particular interest to them. The black and white illustrations by Rudolph Freund are good supplements to the text, but not all the species mentioned are illustrated. Intermediate.

**Dinosaurs.** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1954. 64 pages. This is a much condensed, factual presentation of the manner in which dinosaurs were fossilized, and of how scientists

assembled the scattered bits of fossil information to reconstruct the story of these ancient reptiles. There are sections on the place of reptiles in the story of evolution; descriptions of some of the better known species; adaptations for the peculiar environments in which they lived; and the causes, or theories, for the extinction of dinosaurs. The black and white drawings by James Irving beautifully support and amplify the text. Intermediate.

**The First Book of Snakes.** By John Hoke. Franklin Watts, Inc., New York. 1956. 68 pages. The place of snakes in mythology is followed by discussions of their eating habits, locomotion, hibernation, birth, molting, and some of their enemies. The four poisonous snakes of North America are illustrated. Two pages are devoted to instructions for first aid for snake bite. Some common snakes are illustrated in either black and white or in color, with two or three descriptive facts accompanying each one. A section on snakes as pets, with directions for making suitable cages, and a section on myths versus truths completes the text. Well-written in the general sections, it stints on recognition characters of the common snakes. Paul Wenck's illustrations are an attractive supplement to the text. Intermediate.

**All About Dinosaurs.** By Roy C. Andrews. Random House, Inc., New York. 1953. 141 pages. The emphasis in this book is on how fossils were made and how they are located. The discovery of dinosaurs, the conditions that lead to fossilization, and the early Gobi Desert expedition in which the author played a prominent role comprise the first part of the book. Later sections describe some of the famous dinosaurs, where their fossils were found, and what they looked like. These accounts are spiced with the author's own experiences in Mongolia. A discussion of the theories that may account for the fall of dinosaurs concludes the book. Black and white illustrations, with yellow wash added for decoration, lend atmosphere to the text and help to identify the creatures. Intermediate, Upper.

**Animals in Armor.** By Clarence J. Hylander. The Macmillan Co., New York. 1954. 203 pages. In this reference book on reptiles of North America, several pages of general information on the characteristics and distribution of reptiles precede the major portion on the life histories of individual species. An easy-to-read general information section on turtles is followed by one of specific information on some common turtles and tortoises. The same plan is repeated for lizards and snakes. The text is illustrated with excellent photographs of many of the described species. Intermediate, Upper.

**The Book of Reptiles and Amphibians.** By Michael H. Bevans. Garden City Books, New York. 1956. 62 pages. A colorfully illustrated identification and reference guide to the common reptiles and amphibians of the United States. The high points in the life histories of the animals are illustrated with large color pictures, many of them showing both the young and the adult of the species. The descriptions cover such things as the habits, habitats, and a few interesting facts about the animals. The major part of the book is devoted to snakes, but lizards, turtles, frogs, toads and salamanders are also included. Intermediate, Upper.

**Fishes.** By Herbert S. Zim and Hurst H. Shoemaker. Simon & Schuster, Inc., New York. 1956. 157 pages. This is primarily a guide to the principal families and species of fishes, together with a brief life history of the most common ones. In addition to identification, there is material on the structure, the evolution, the economic importance, and the conservation of fishes. Both fresh-water and salt-water fishes are included. Illustrations are in color and are fairly accurately reproduced. As in others of this series, there is an immense amount of information between these covers. Intermediate, Upper.

**Reptiles and Amphibians.** By Herbert S. Zim and Hobart M. Smith. Simon & Schuster, Inc., New York. 1956. 160 pages. Following several pages of general information such as "fact and fable", how to collect and care for reptiles and amphibians, first-aid for snake bites, and some facts about evolution, there are about one hundred pages in field guide form. Nearly every page contains one or more colored illustrations by James Irving, concise text describing the animal and its life habits, and a map showing its distribution. The descriptions are necessarily brief, but accurate. A tremendous amount of factual information is crowded into this excellent little pocket reference to the reptiles and amphibians of the United States. Intermediate, Upper.

**Tropical Fish in Your Home.** By Herbert R. Axelrod and William Vorderwinkler. Sterling Publishing Co., Inc., New York. 1956. 128 pages. The first part of this handbook deals with the mechanics of good aquarium care—setting up the aquarium; the characteristics of the water; foods and the frequency of feeding; and the symptoms and treatment of fish diseases. The latter part of the book contains the descriptions and habits of individual species of popular tropical fish, together with suggestions for their care. Most of the fishes are illustrated with black and white photographs, but a 32-plate color section is included. Authentic, complete, and useful, this is an excellent reference. Intermediate, Upper.

**Fiddler Crab.** By Mary Adrian. Holiday House, Inc., New York. 1953. 48 pages. The sand fiddler crab, *Uca pugilator,* is the subject of this life history story, told simply and straightforwardly in easy text and in pictures that bring out well the physical changes throughout the life of this common inhabitant of American seashores. The delicate, three-color illustrations by Jean Martinez are noteworthy, particularly the double-spread drawing of much-enlarged plankton and the illustration showing predation by larger animals. Actual size is indicated in legends, especially where small things are greatly magnified. Primary.

**Garden Spider.** By Mary Adrian. Holiday House, Inc., New York. 1951. 38 pages. This vividly written Easy Science Book gives a thoroughly satisfying picture of the life cycle of a familiar creature of American gardens and fields. Written in language simple enough for young readers to read to themselves, and adorned with what someone called "garden-bright" pictures by Ralph Ray, this book should delight many children interested in the world about them. Primary.

**Honeybee.** By Mary Adrian. Holiday House, Inc., New York. 1952. 52 pages. The yellow-banded Italian honeybee, the most common race of honeybees in the United States, is the subject of this simply told story. The text describes the life of Honey Bee from egg to adulthood, and through her various occupations from nurse bee to house bee to field bee. Interesting illustrations in blue, green, and yellow, by Barbara Latham, help to make this little book an inviting introduction to bee life, although certain seasonal inconsistencies must be overlooked. Primary.

**Monarch Butterfly.** By Marion W. Marcher. Holiday House, Inc., New York. 1954. 46 pages. This story describes the northward migration of a female Monarch butterfly, and the laying of her eggs. The growth, activities, and associates of the female caterpillar that hatched from her last-laid egg are described, as are the pupation and emergence of the beautiful adult. Her mating and egg-laying, her fall migration southward, and her shorter northward journey the following spring conclude the story. Two final pages contain excellent suggestions on how to raise a Monarch butterfly. This simple story gives a general picture of the life of one individual, but it does not allow for variations in the time-span of the several stages nor does it carry the story of this particular butterfly's descendants through to their southward migration. Colorful illustrations by Barbara Latham closely parallel the text. Primary.

**The True Book of Insects.** By Illa Podendorf. Children's Press, Chicago. 1954. 47 pages. Beginning with the concept that insects are animals, the

brief, easily read text of this attractive book points out ways in which insects are alike, and describes differences in their "growing up," in their ways of life, and in their abilities. About half of the large-scale, detailed illustrations, by Chauncey Maltman, are reproduced in black and white, the rest in full color. Actual sizes of insects usually are indicated. Information is scant, but the book undoubtedly would stimulate observation and discussion. Primary.

**A Child's Book of Sea Shells.** By William M. Hutchinson. Maxton Publishers, Inc., New York. 1954. 32 pages. This inexpensive tall-oblong book with its colorful picture cover and decorative endpapers is an excellent "first" book for children casually interested in seashore life. After a one-page introductory section, there are brief discussions of various kinds of shelled animals from many parts of the world. The text emphasizes the biology of the animals and often presents related groups rather than single species. The excellent large-scale illustrations, some in full color and others in black and white, are exceptionally well integrated with the text and add much to its value. Primary, Intermediate.

**Earthworms.** By Dorothy C. Hogner. Thomas Y. Crowell Co., New York. 1953. 47 pages. In this easy reader about the common earthworm, the author describes its appearance, its locomotion, how it eats, what it does in different kinds of weather and seasons, and who its enemies are. To show that it is important as a tiller of the soil, a simple experiment is described—one that uses a pint jar and a few leaves. There is a section on raising earthworms in boxes, with complete directions on how to do it. A few sketches by Nils Hogner supplement the text. Primary, Intermediate.

**Firefly.** By Paul M. Sears. Holiday House, Inc., New York. 1956. 38 pages. This is the life story of a firefly from the time it was an egg in the loose soil to the time it was an adult female and, having mated, laid eggs of its own. The two-year span of these flashing fliers is an interesting one, and the mating is even more intriguing. The illustrations, in two colors, are by Glen Rounds. Planned for ages 6 to 9, but probably better suited for older readers. Primary, Intermediate.

**Green Darner The Story of a Dragonfly.** By Robert M. McClung. William Morrow and Co., Inc., New York. 1956. 48 pages. The first pages of this true-to-life story introduce Green Darner, and tell of his life until he found a mate and flew with her while she laid her many eggs. What happened to the water-dwelling nymphs that hatched from those eggs is the subject of the rest of the book. Noteworthy features are the descriptions of the adult, of the growth of the nymphs, of their feeding apparatus, of their "breathing," and of the transformation of one nymph.

Well-related, simple drawings in black and white or with blue and green added, by the author, effectively support the text. Primary, Intermediate.

**The Octopus.** By Olive L. Earle. William Morrow and Co., Inc., New York. 1955. 64 pages. Following a general description of octopuses is a detailed, interesting discussion of the common octopus of eastern American shores, since "by taking a close look at him, we can find out much about octopuses in general." The last few pages of the book deal with squids, cuttlefishes, the pearly nautilus, and other relatives of the octopuses. The clear, black and white drawings by the author are decorative as well as especially helpful in bringing out details of structure. Primary. Intermediate.

**Spiders.** By Dorothy C. Hogner. Thomas Y. Crowell Co., New York. 1955. 56 pages. This book is well designed for use as one watches spiders. The simply written text, divided into short sections, describes the physical make-up of spiders, their spinning, how they move, what and how they eat, spider nurseries, how spiderlings grow, some enemies, and some relatives of spiders. The garden spider and a few other web-makers, the tarantula, and the poisonous Black Widow receive special attention. Clear, easily followed directions tell how to collect an orb web. Helpful black and white drawings by Nils Hogner illustrate the text. An index makes the book useful as an elementary reference. Primary, Intermediate.

**Tiger The Story of a Swallowtail Butterfly.** By Robert M. McClung. William Morrow and Co., Inc., New York. 1953. 48 pages. Tiger Swallowtail's story, told in clear, simple text, describes the year-long life cycle of these showy black and yellow butterflies. The author's beautiful illustrations in black and white or with green and swallowtail yellow added decorate the pages of the story, and contribute much to its informational value. Primary, Intermediate.

**The Adventure Book of Shells.** By Eva Knox Evans. Capitol Publishing Co., Inc., New York. 1955. 93 pages. Written in sprightly, conversational style, this fascinating book characterizes mollusks, tells where to find them, how to collect, clean and care for shell collections, and how to make aquariums or terrariums for mollusks. In addition, there are short descriptions of the structure and general habits of univalves and bivalves, and chapters on starfish and other oddities of the sea, on ancient and present-day uses of shells and shelled animals, and on the making of shell jewelry and other articles. Besides numerous amusing line drawings by Vana Earle, there is a 16-page picture guide that shows many kinds of shells, photographed in actual size and arranged by family, with common and generic names. The book is indexed. Intermediate.

**All About the Insect World.** By Ferdinand C. Lane. Random House, Inc., New York. 1954. 136 pages. Selected insects from several orders are described to illustrate their diversity of structure and adaptation to various environments. Several moths, a few butterflies, some extraordinary beetles, large and small bugs, a dragonfly, a praying mantis, a honeybee, an ant, and a firefly are some of the insects whose life habits, economic importance and structural oddities are highlighted. The text is well illustrated by Matthew Kalmenoff, is easy to read, but contains some misstatements. These, however, are more than offset by the breadth and readability of the text. Intermediate.

**All About Moths and Butterflies.** By Robert S. Lemmon. Random House, Inc., New York. 1956. 144 pages. The general characteristics of moths and butterflies, the habits of some moths and some butterflies, and how to collect and study them are the major sections of this book. Each described species is sketched in black and white or monochrome by Fritz Kredel. Specific directions for collecting and studying living moths and butterflies are an excellent inclusion. The text is simply written, and for the most part accurate. Intermediate.

**Collecting Cocoons.** By Lois J. Hussey and Catherine Pessino. Thomas Y. Crowell Co., New York. 1953. 73 pages. This is mainly a how-to-do-it book with suggestions and directions for collecting cocoons, caring for those with live pupae so that adults may emerge (including a moth alarm clock), providing cages in which adults can mate, rearing caterpillars, and keeping a collection of cocoons. The simply written text tells also what insects make cocoons, how some are made, how moths escape from them, and about the activities of adult moths. A section to help in finding and identifying cocoons occupies the latter half of the book. The black and white illustrations are by Isabel S. Harris. Intermediate.

**Crickets.** By Olive L. Earle. William Morrow and Co., Inc., New York. 1956. 64 pages. In this book, beautifully illustrated with black and white drawings by the author, one can find accurate, interesting information about many kinds of crickets, their anatomy and habits, their foods, and how they protect themselves. Field crickets are described at length—including a detailed account of how they chirp—and are used as a basis of comparison with other kinds such as ground crickets, mole crickets, and snowy tree crickets. A final section tells how to keep crickets as pets. The text is clearly and concisely written, but probably best suited for able readers. Intermediate.

**The First Book of Bees.** By Albert B. Tibbets. Franklin Watts, Inc., New York. 1952. 68 pages. This is a detailed description of the life history of a honeybee, with added details of the swarm and the production of

honey. The worker, the queen, and the drone are the key members in the complex society of a bee hive. Workers fulfill such duties as house guards, nectar-gatherers, nursemaids, and even air conditioners. The drones and the queen function for reproduction only. The author's bee-keeping experience lends authenticity to the simple text; Helene Carter's beautiful color illustrations add atmosphere and help to explain it. Intermediate.

**Manty the Mantis.** By Captain Burr W. Leyson. E. P. Dutton and Co., Inc., New York. 1952. 64 pages. Contrary to the implication of its title, simple straightforward text characterizes this detailed story of a fascinating insect, chiefly of one kept captive so that it might be watched and photographed. The text is readable and excellently complemented by the pictures, among which are one of hatching mantids and a series showing the final molt. The book can be read by able readers from grade 4 up, but younger children have enjoyed having it read to them. Intermediate.

**Insects Engineers: The Story of Ants.** By Ruth Bartlett. William Morrow and Co., Inc., New York. 1957. 128 pages. The anatomy, social habits, and engineering feats of various kinds of ants are well described in this informative book, which is detailed enough to permit clear pictures of differences in behavior of different species and among ants of different habitats and geographical areas. The text is skillfully written and illustrated with black and white drawings by the author. The book emphasizes learning by observation, and the last chapter gives exact instructions on how to collect ants, keep them in glass nests, and watch their activities. Intermediate, Upper.

**Insect Friends.** By Edwin W. Teale. Dodd, Mead and Co., New York. 1956. 96 pages. Another appealing book of insects illustrated by Teale's famous photographs. Several insects that may be counted among man's friends (the honeybee, the ladybird beetle, the lacewing fly, the dragonfly, and the bumblebee) are briefly described and illustrated, as well as several whose value to man is questionable or doubtful, but which are nevertheless interesting. Although there is little pattern to the selection of the insects, the descriptions, together with the beautiful pictures, make it an attractive gift for the young entomologist. Intermediate, Upper.

**Insects.** By Herbert S. Zim and Clarence Cottam. Simon and Schuster, Inc., New York. 1951. 160 pages. Doublespread pages picturing the development and the structures of insects, and the inclusion of considerable general information make this small book more than "A guide to familiar American insects." A key to insect groups helps to simplify identification. The greater part of the book is occupied by brief (one or two pages) accounts of a species or a group of insects, accompanied by large-scale

pictures in full color and range maps. The illustrations, by James Gordon Irving, show not only the adult insect with actual size indicated, but frequently picture special habits, habitats, or immature stages. A helpful reference for beginners of any age. Intermediate, Upper.

**The Junior Book of Insects.** By Edwin W. Teale. E. P. Dutton and Co., Inc., New York. 1953. 250 pages. The title page of this book describes its contents as "interesting facts about the lives and habits of the common insects, together with simple instructions for collecting, rearing, and studying them." Not intended as a guide to identification, it offers many suggestions for studies of living insects. The present edition is a revision of *The Boys' Book of Insects*, published in 1939. A new chapter on life histories and revision of the bibliography are among the changes and additions. The book is illustrated with clear drawings and excellent photographs by the author. Intermediate, Upper.

**Sea Treasure.** By Kathleen Y. Johnstone. Houghton Mifflin Co., Boston. 1957. 232 pages. A guide to sea shells and shell collecting. The major groups of molluscs are described in some detail, followed by several chapters on how to look for shells, how to prepare them for collections, and exchanging them with other collectors. *Sea Treasure* is best, however, for its descriptive chapters on the lives and habits of the shells that a collector might find. Intermediate, Upper.

## Plants

**A Tree Is Nice.** By Janice M. Udry. Harper and Brothers, New York. 1956. 36 pages. This tall oblong picture book is a thoroughly delightful appreciation of trees, expressed in brief, simple statements that bring out the variety of reasons why a tree is nice, whether you have one or many. Each page is largely occupied by an appealing picture in black and white or in four colors, done by Marc Simont. Both text and pictures are full of humorous details and lively action that will endear this book, winner of the 1956 Caldecott medal, to many small readers. Primary.

**The True Book of Plants We Know.** By O. Irene S. Miner. Children's Press, Chicago. 1953. 47 pages. The simple text of this small book is easy to read and contains some elementary facts about plants, although some topics are oversimplified. The illustrations, some in color but more in black and white, are by Irene Miner and Karl Murr. Primary.

**The True Book of Weeds and Wild Flowers.** By Illa Podendorf. Children's Press, Chicago. 1955. 47 pages. This easy-to-read book is divided nearly evenly into sections on weeds and on wildflowers. Weeds are de-

fined as plants that are growing where they are not wanted. The wildflowers are somewhat questionably distinguished from the weeds as "plants that have pretty flowers and that are not harmful." This book, illustrated with alternating double pages of drawings in black and white and in color, by Mary Gehr, is one of the more helpful of its series. Primary.

**What's Inside of Plants?** By Herbert S. Zim. William Morrow and Co., New York. 1952. 32 pages. Large explanatory pictures in color by Herschel Wartik accompany the text of this elementary book on botany, which tells about the different parts of plants, and the function of each part, with detailed attention to leaves, stems, roots, flowers, fruits, and seeds. Simple experiments are included to aid in understanding what happens inside of plants. This book is one of a series in which pages of simple text printed in large type for younger readers alternate with pages in smaller type for adults or older readers, an arrangement which proves confusing to some users. Primary, Intermediate.

**Our American Trees.** By Ruth H. Dudley. Thomas Y. Crowell Co., New York. 1956. 148 pages. The first five chapters of this well-written book describe American forests as they were when the Pilgrims arrived, and as they are today, discuss how a tree grows, why growing trees are important, and how we are "making our barren lands green." Other chapters tell about trees from which we get various products, about the biggest trees, the smallest, the rarest, and the most plentiful. A concluding chapter, *Things You Can Do* (to preserve our forests), a brief list of books about trees, and an index complete the book. It would contribute to both science and conservation studies, although there are some botanical inaccuracies. The illustrations are black and white drawings by Nils Hogner. Intermediate.

**Plants in the City.** By Herman and Nina Schneider. The John Day Co., Inc., New York. 1951. 96 pages. The unique features of this helpful activity book are its emphasis on plants that can grow outdoors in cities and its chapter of explanation of "city ways of city plants." Otherwise, it presents familiar suggestions such as studies of roots, stems, leaves, and their functions, and of ways of "making more plants." A long chapter of experiments with beans is included and there are two chapters on various types of indoor gardens. Brief suggestions on how to keep "house plants happy," and of plants suited to various light conditions conclude the book. The abundant, clear line drawings by Cynthia Koehler help to clarify suggestions and to identify plants. Intermediate.

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drawings alternate with others in black and white. The pictures, by Marguerite Scott, are interesting and helpful. An index and an excellent glossary add to the usefulness of the "first" book for beginners of any age. Intermediate, Upper.

**Flowers; Trees.** By Herbert S. Zim and Alexander C. Martin. Simon and Schuster, Inc., New York. 1950; 1952. 157 and 160 pages. In the first of these inexpensive beginner's guides, some 260 common, widely distributed American flowering plants are pictured in color by Rudolf Freund and described, either as individual species or in groups of related species. The plants described are arranged according to flower color, and there are sections on how to use the book, on plant habitats and structures, on wildflower conservation and on activities such as photographing, growing, and collecting flowers. *Trees* begins with a general section, and a simple picture-key, followed by descriptions of some 150 trees, their habits, fruit, habitat, economic importance and value for wildlife. Illustrations by Dorothea and Sy Barlowe are in color, and include leaves, twigs, flowers, bark, and general form. In both books small maps indicate distribution. Intermediate, Upper.

**Microbes at Work.** By Millicent Selsam. William Morrow and Co., Inc., New York. 1953. 95 pages. Bacteria, molds, yeasts, and their importance to us are interestingly discussed. The many suggested activities help to make readers conscious of the ever-present host of tiny organisms—some working against man, but the majority doing little or no harm, and many some good. The importance of the bacteria of decay is emphasized. Black and white line drawings by Helen Ludwig are satisfying supplements to the text. Intermediate, Upper.

**The Story of Microbes.** By Albert Schatz and Sarah Riedman, Harper and Brothers, New York. 1952. 172 pages. This comprehensive story of microbes begins with a discussion of their importance. Succeeding chapters deal with the numbers, groups, and sizes of microbes, their classification, reproduction, the history of man's knowledge concerning them, their foods, and where and how they live. Methods of culturing microbes are described and directions are devoted to soil bacteria and to the relationships of microbes with each other and with other living things. A detailed index and interesting black and white drawings by Ida Scheib add value. Intermediate, Upper.

**The Story of Mosses, Ferns and Mushrooms.** By Dorothy Sterling. Doubleday and Co., Inc., New York. 1955. 155 pages. Excellent photographs and well-written text help to describe the form and color of fungi, the delicate leaves and spore cases of mosses, and the lovely greenery of

1951; 1952. 64 pages each. The excellent series of which these three books are a part was inaugurated in 1949, with *Play with Plants*. Each book combines clear, simply written, accurate information about plants with detailed directions for simple activities that provide varied opportunity to learn by doing. *Play with Trees* deals with how to grow your own trees, how a tree grows, how trees differ, how water and foods move through a tree, and tree flowers. *Play with Vines* helps its users discover, through helpful text and suggested activities, the different ways in which vines cling and climb. In *Play with Leaves and Flowers* are information and things to do with movements of leaves (for example, clover leaflets close at night), leaves that catch insects, movements of flowers (garden tulips close on cold spring days and open only when it gets warm), movements of fruits and seeds, and with other plants that do things—compass plant, for example. Each of the books is generously illustrated with clear, uncluttered line drawings by Fred F. Scherer. Intermediate.

**What Wildflower Is It? What Tree Is It?** By Anna Pistorius. Follett Publishing Co., Chicago. 1950; 1955. 25 and 29 pages. The plan of these two books is similar. On each text page are one or two questions which serve to introduce brief, interesting, well-written information, part of which answers the introductory questions without naming the flower or tree. A key page at the end of each book supplies correct names. *What Wildflower is It?* deals in this manner with 30 kinds of wildflowers, and 20 more are pictured and briefly described. Information about each plant includes a description, usually range and season, and frequently folklore and uses, past and present. *What Tree is It?* introduces 34 kinds of American trees, and presents brief paragraphs that combine botanical and human interest information. Additional species of trees are briefly mentioned. In both books illustrations by the author are reproduced in good full color. Those in the book on trees usually include a habit sketch, leaf, flower, and fruit, sometimes winter twigs, and sometimes details of related species of trees. Those in the wildflower book usually show only a flowering spray. Intermediate.

**The First Book of Microbes.** By Lucia Z. Lewis. Franklin Watts, Inc., New York. 1955. 65 pages. This small book is a straightforward, lucid introduction to the microscopic plants and animals that so greatly affect our lives. "They make it possible for plants to grow; they keep refuse cleared away; they help in making some of our foods; they produce chemicals for the wonder drugs that have saved countless lives." Some cause diseases in other living things. How and by whom microbes were discovered occupies five pages of the fascinating text, and two pages tell about some workers with microbes. Pairs of pages illustrated in red-brown

ferns. Included are some interesting evolution, some highlights in the life cycles of the seedless plants, and an introduction to a few common species. Intermediate, Upper..

**The Wonders of Seeds.** By Alfred Stefferud. Harcourt, Brace, and Co., Inc., New York. 1956. 119 pages. The first chapter of this interesting, authoritative book, tells about the discovery of some ancient lotus seeds, and what scientists learned about them. Succeeding chapters discuss how seeds are made, how they sprout, seed "packages" (fruits), how seeds are scattered, and seeds as food. A novel chapter deals with the work of plant breeders, and there are frequent activity suggestions. There is an index, and the book is sparsely but interestingly illustrated with black and white drawings by Shirley Briggs. Intermediate, Upper.

## Earth Science

**The True Book of Air Around Us.** By Margaret Friskey. Children's Press, Chicago. 1953. 48 pages. Much of this little book is simple information about air and weather, delightfully written for beginning readers. Other parts are somewhat more difficult in content, and some, such as the section on *Lightning* and that on *Other Facts About Air* are marred by confusing or inaccurate statements. The decorative two-color illustrations, by Katherine Evans, are interesting and often amusing. Primary.

**True Book of Moon, Sun, and Stars.** By John Lewellen. Children's Press, Chicago. 1954. 48 pages. About half of this book for beginning readers presents simple, interesting information about the moon. The latter sections deal with the sun, stars, the earth's rotation and revolution, and "shooting stars" that are not stars. The two-color illustrations, by Lois Fisher, are childlike and amusing. Primary.

**You Among the Stars.** By Herman and Nina Schneider. William R. Scott, Inc. New York. 1951. Unpaged. In this unique book, young readers look beyond their own home, city and state to the universe of which they, their home, and their country are parts, and become acquainted with many sky phenomena. The text is clear and simple, and touches upon subjects about which young children often are curious. The illustrations are striking lithographs in two colors, by Symeon Shimin. Primary.

**Everyday Weather and How It Works.** By Herman Schneider. McGraw-Hill Book Co., New York. 1951. 181 pages. The "why" of elementary weather mechanics is explained in simple terms that draw upon common experiences. The refrigerator, the radiator, some bottles, and some milk cartons are used in demonstrations and activities designed to explain heating and cooling, evaporation and condensation, types of precipitation,

and the causes of winds. There are additional explanations of air masses, fronts, and the weather associated with them. There are directions for simple weather apparatus, although it is questionable how much of such apparatus can be put to practical use. About half of the illustration is decorative; the rest is a good supplement to the text. Primary, Intermediate.

**What's Inside the Earth?** By Herbert S. Zim. William Morrow and Co., New York. 1953. 32 pages. This little book includes material on mines, caves, water tables, volcanoes, earthquakes, and mountain formation. The treatment of all topics is brief and general. As with other "What's Inside of" books, a page of large print and simple ideas is followed by a full page of illustration, and this by another text page of smaller print and more complex ideas for more advanced readers or adults. Primary, Intermediate.

**The Adventure Book of Rocks.** By Eva K. Evans. Capitol Publishing Co., Inc., New York. 1955. 91 pages. In this book are described the early uses of stones as tools and weapons, the folklore associated with rocks, and hints on collecting and identifying the more common rocks and minerals. A 16-page section of black and white photographs is bound into the center of the book. Its legends are confusing, but the photographs are excellent. The rest of the illustrations are decorative rather than informative. Intermediate.

**All About Our Changing Rocks.** By Anne Terry White. Random House, Inc., New York. 1955. 137 pages. This book describes how early geologists learned the secrets of the rocks; how mountains and other large features formed by shifts in the earth's crust; how erosion wore down these features; igneous, sedimentary, and metamorphic rocks and their characteristics; and the fossil record in the rocks. The text is excellent for its description of the forces at work to build up and wear down the features of the earth's crust. It is least effective in describing the minerals that comprise various rocks. The frequent illustrations by René Martin are helpful in explaining the geologic process involved in mountain-building and erosion. Intermediate.

**All About the Stars.** By Anne Terry White. Random House, Inc., New York. 1954. 140 pages. In this book of general elementary astronomy, there are sections on the sun, the planets and their satellites, the Milky Way, and the rest of the universe. The well-written text is descriptive, rather than merely factual. The discoveries of Galileo, Herschel, Bessel, and Lowell provide interesting historical background. Marvin Bileck's illustrations are attractive. The book is useful either as a reader or as a reference. Intermediate.

**All About Volcanoes and Earthquakes.** By Frederick H. Pough. Random House, Inc., New York. 1953. 147 pages. A reconstruction of Vesuvius' destruction of Pompeii and the author's eyewitness account of the birth of Parícutin in Mexico highlight the action of famous volcanoes, including Krakatoa, Pelée, Fujiyama, and others. The structure and formation of volcanoes, the destruction wrought by them, the theories of their causes and distribution comprise the first half of the text. Earthquakes and their causes comprise the latter half. A few of the illustrations help to explain the text; most of them are for decoration. The book is both easy to read and informative—more valuable as a science reader than as a reference. Intermediate.

**Among the Rocks.** By Terry Shannon. Sterling Publishing Co., Inc., New York. 1956. Unpaged. One can hardly hope to be at home among the rocks after reading a book of this sort, but it will stimulate some youngsters to begin rock studies on their own. A few statements are open to question because of their simplicity. The book is most attractive, even though some of the colors are unnaturally vivid. Intermediate.

**The Earth Satellite.** By John Lewellen. Alfred A. Knopf, Inc., New York. 1957. 59 pages. One of the highlights of the International Geophysical Year will be the launching of the first man-made satellite. Here, in simple text, with supplementary illustrations by Ida Scheib, is a description of the problems involved in getting the satellite to its orbit and keeping it there, and the subsequent transmission of data back to earth. The text is clearly and authoritatively written. The satellite's movements, rather than its internal mechanisms, are described. Intermediate.

**The Golden Book of Astronomy.** By Rose Wyler and Gerald Ames. Simon & Schuster, Inc., New York. 1955. 96 pages. In this remarkably complete book are explanations of day and night, the seasons, and eclipses, together with descriptive information on the planets, the sun, and the galaxies beyond our own Milky Way. The frequent colorful illustrations by John Polgreen are most helpful in interpreting the text. A section on rocket travel, its problems and promises, concludes the book. In text and illustration, this book is a readable introduction to astronomy. Useful as a reference. Intermediate.

**Lightning and Thunder.** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1952. 64 pages. How air-mass thunderstorms form, what causes lightning and its accompanying thunder, and what are the effects of lightning strikes are the subjects of this book. The rising of heated air, its subsequent cooling and condensation, and the separation of electric charges that produce the lightning are described as the essential features of a thunderstorm. One short section deals with experiments on static

electricity. Large and frequent black and white illustrations by James Irving help to explain the text. Intermediate.

**Oil, Today's Black Magic.** By Walter Buehr. William Morrow and Co., Inc., New York. 1957. 96 pages. The automobile and the subsequent demand for gasoline, once an irritating companion of kerosene, have forced a world-wide search for new oil fields. This is an account of the search for oil, the early and the present methods of securing oil, its transportation, and its treatment at the refinery. Various types of drilling rigs as well as the problems and techniques of drilling are described. There is also a brief description of the geological formations associated with oil-bearing rock. The lucid and fascinating text is supplemented with excellent illustrations by the author. Intermediate.

**The Real Book About Stars.** By Hal Goodwin. Garden City Books, New York. 1951. 183 pages. A rather complete factual treatment of both the solar system and the stars. The first half of the book deals with the solar system—ten chapters on the planetary bodies, and one on the sun. The second half deals with stars, their differences, and the way our sky changes from month to month. There is an appendix of tabular data on the planets and stars. Only one diagram to each nine pages of text seems too few for an adequate introduction to the skies. The book might better be used after one has had a more graphic introduction to astronomy. Intermediate.

**Rocks and Minerals.** By Robert Irving. Alfred A. Knopf, Inc., New York. 1956. 175 pages. What the major kinds of rocks are, what minerals comprise them, and how rocks change are the subjects of this book. The first section is a word picture of various common minerals; the second describes erosion, diastrophism and glaciation; the third deals with commercially valuable minerals and ores; the fourth is a short section on collecting. Sixteen pages of black and white photographs are bound into the center of the book. Other sketches supplement explanations of processes at work to change rocks. The book is best used as a reference. Intermediate.

**The Sun.** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1953. 64 pages. A great deal of factual information about the sun is presented in pre-digested form. The size, temperature, weight, and rate of energy production are listed and compared with other solar system units. A large section is devoted to sunspots and their effect on communications and organisms. Finally, the importance to us of the sun's energy is discussed—energy for green plants, fuels, solar houses, weather, and the movement of the earth and moon. The book is freely illustrated in black and white by Larry Kettelkamp. Intended as a graphic introduction to

the sun, there is so much condensed information here that its readability is considerably lessened. Intermediate.

**Weathercraft.** By Athelstan F. Spilhaus. Viking Press, New York. 1951. 64 pages. A book of directions for making simple weather instruments from low-cost materials and household items. The instruments are all workable, although movable ones such as the anemometer with the mixer-gears will not react to slight air movements. Photographs of the completed apparatus help the reader visualize the over-all construction. A short section on weather maps and forecasting completes the book. This is a handy guide for the student who wishes to construct and operate a backyard weather station. Intermediate.

**Comets.** By Herbert S. Zim. William Morrow and Co., Inc., New York. 1957. 64 pages. For hundreds of years, people have watched and wondered about comets. This attractive book, printed and illustrated in deep blue, tells how man's knowledge of comets grew bit by bit, presents clear, accurate, up-to-date information, and outlines theories and conjectures about them. The illustrations, by Gustav Schrotter, beautifully complement the text. The book will provide satisfying information for readers of age 9 and above, particularly for those with some knowledge of astronomy. Intermediate and Upper.

**Exploring the Moon; Exploring Mars; Exploring the Universe.** By Roy A. Gallant. Garden City Books, New York. 1955; 1956; 1956. 63, 62, and 62 pages. These large (9x12) books, beautifully illustrated in color by Lowell Hess, emphasize the theories that underlie our present knowledge of the universe. The text is smoothly written and is easy to read, yet it has enough breadth of ideas to span several grade levels. The books can be used either for informational reading or for reference. As frequently happens in books on astronomy, distances and sizes are not to the same scale. This may give the reader a distorted concept of space relationships unless pointed out by the teacher. *Exploring the Moon* concerns the origin of the satellite and its surface features, as well as its effect on our tides and its role in eclipses. *Exploring Mars* deals mainly with the "mystery" of the "canals", and the possibility that intelligent beings may inhabit that planet. Speculation takes up a considerable portion of the book. The remainder is devoted to the early observations of Mars and a discussion of the physical conditions at its surface. *Exploring the Universe* is the best of the three books. It contains a wealth of information about distances, sizes, the early study of the universe, and the "expanding universe." Intermediate, Upper.

**Find the Constellations.** By H. A. Rey. Houghton Mifflin Co., Boston.

1954. 72 pages. In this guide to the constellations in the northern skies, each constellation is shaded to show its shape. Using the same position and scale, it is then located on a diagram of the seasonal sky. At intervals there are quizzes consisting of a page of diagrammed constellations, and an opposing page showing the stars only. Some legends about the constellations and some sections of interesting facts and figures make the book an effective treatment of the night sky. Intermediate, Upper.

**The First Book of the Weather.** By Rose Wyler. Franklin Watts, Inc., New York. 1956. 62 pages. An encyclopedic approach to the weather, with simple artistic sketches to lend atmosphere to the text. Described and tersely explained are such things as the characteristics of air, types of precipitation, types of clouds and their means of formation, weather instruments, air masses, and weather maps. As with many weather books, there are too many ideas for leisure reading, but the book is useful as a class reference on weather. Intermediate, Upper.

**Hurricane Hunters.** By Ivan Tannehill. Dodd, Mead & Co., Inc., New York. 1956. 271 pages. A story of the major Caribbean hurricanes during the past century, and the attempts of weathermen to fathom their causes and their characteristics. In vivid accounts of the awesome destructive power of hurricanes, the author describes attempts to probe these storms, first by ship, later by radio and radar, and now by airplane flights directly into the eye. The many first-hand reports by the pilots and observers who flew the hurricane missions will give the reader a new appreciation for the efforts of the Weather Bureau and the men who man it. Intermediate, Upper.

**Hurricanes and Twisters.** By Irving Adler. (pseud., Robert Irving). Alfred A. Knopf, Inc., New York. 1956. 143 pages. The causes, nature, behavior, and prediction of hurricanes and tornadoes are explained in simple, clear style in this small, informative book. Frequent reference is made to particular storms, especially Hurricane Hazel, and their disastrous results, including statistics on death and destruction. Clear line drawings supplement the explanations and there is a 16-page section of photographs of these storms and their results. Intermediate, Upper.

**Riches from the Earth.** By Carroll L. and Mildred A. Fenton. John Day Co., Inc., New York. 1953. 156 pages. This is an annotated list of useful and valuable rocks, minerals and ores. Most of them are common; some are rare. There are descriptions of sources, methods of extraction and processing, original uses or discoveries, and importance in our economy. Black and white sketches by the authors have limited value, since they cannot show color and lustre—two important properties of minerals.

The vast amount of factual information makes the book valuable as a reference. Intermediate, Upper.

**Snow.** By Thelma H. Bell. The Viking Press, New York. 1954. 56 pages. What snow is, how it is formed, the types of snowflakes, and what snow does when it falls are described and illustrated. The "snowflake cousins" such as frost, sleet, hail, and glaze have a few things in common, but all are distinctly different from snow. The book ends with the story of "Stella", a typical snowflake, born at 35,000 feet, and drifting to earth to become a tiny part of its white mantle. Intermediate, Upper.

**The Stars, A New Way to See Them.** By H. A. Rey. Houghton Mifflin Co., Boston. 1952. 144 pages. The first three parts of this book deal with locating the constellations. Part I concerns orientation of the observer by means of Polaris and the circumpolar constellations. Part II contains constellation charts in blue and white, with some interesting mythology and astronomy included in the facing text. Part III contains star charts and tables for locating the constellations at various times throughout the year. Part IV, the most readable section, deals with the whys and hows of spacial position, the earth's seasons, solar and sidereal time, and some general descriptive astronomy, including a particularly good diagram of the relative sizes of the sun and planets. Intermediate, Upper.

**The Story of the Ice Age.** By Rose Wyler and Gerald Ames. Harper and Brothers, New York. 1956. 78 pages. Glaciers, their formation, their movements, and the life associated with them are the subjects of this book. Remnants of extinct animals, stones carried long distances by the moving ice, and the scratches on the bedrock all helped to unravel the glacial puzzle. The text is in story form, with only enough factual material to lend authenticity. The black and white sketches add atmosphere. Intermediate, Upper.

**Understanding Maps.** By Beulah Tannenbaum and Myra Stillman. McGraw-Hill Book Co., Inc., New York. 1957. 141 pages. The use of direction, distance and landmarks to find one's way; how to tell latitude by sighting on Polaris; how longitude is determined by means of a clock and a sight on the sun; and the kinds of maps, including weather maps, are included in this book. The early chapters emphasize simple activities and things that can be seen and measured. Later chapters deal with more abstract features such as projection, relief, and geologic maps. A useful reference and activity book for teacher and pupil. Intermediate, Upper.

**Weather.** By P. E. Lehr, R. W. Burnett, and H. S. Zim. Simon & Schuster, Inc., New York. 1957. 157 pages. A complete guide to the phenomena of, and the forecasting of, the weather. Clouds, precipitation, winds, air

masses, and the structure of the atmosphere are explained and illustrated with encyclopedic directness and accuracy. Frontal weather, its movement, and its prediction, and air-mass weather such as thunderstorms, hurricanes, and tornadoes are also described in detail. A more complete and accurate, yet fairly simple and straightforward, guide to the weather would be difficult to find. Intermediate, Upper.

**The Earth Our Home.** By Patrick Moore. Abelard-Shuman, Ltd., New York. 132 pages. 1957. The origin of the earth, the physical forces at work on its crust, and the life that has evolved on it are the major subjects of the book. Half of the book is an excellent, concise account of the highlights in organic evolution. Glaciation, the interior of the earth, and the place of the earth in the solar system make up the rest of the text. The language is not simple, nor are the few illustrations particularly helpful, but the clear, condensed science will prove stimulating to a good reader. Useful either as a reader or as a reference. Upper.

**Planet Earth.** By Rose Wyler. Henry Schuman, Inc., New York. 1952. 154 pages. Beginning with a description of the solar system and how the earth compares with the other planets, the book describes, in turn, how the ancients discovered and named other planets; the sun as a star and why it shines; the earth's relation to other heavenly bodies; the earth's movements; its surface features, including weather and mapping; and its mineral resources. Small, but clear, black and white drawings by John Sand sparingly illustrate this comprehensive text. Upper.

**The Story of Rocks.** By Dorothy Shuttlesworth. Garden City Books, New York. 1956. 56 pages. A combination field-guide-reference-book on minerals and rocks. Beautifully illustrated in color, some of the outstanding minerals are described in terms a little abstruse for the uninitiated, but accurate and interesting for those with a little prior knowledge of rocks and their composition. The illustrations lend much support where lack of acquaintance with the materials may otherwise be a hindrance to the reader. Upper.

**Treasures of the Earth.** By Fred Reinfeld. Sterling Publishing Co., Inc., New York. 1954. 152 pages. The first half of this book describes how the earth's surface features have been formed by deposition, faulting and folding, volcanic action, and erosion. The second half deals with the "treasures" of the earth's crust—oil, coal, metallic ores, and precious stones —and their formation, extraction, and processing or refining. There is a chapter on collecting rocks and minerals. Many black and white photographs supplement the text of this worthwhile reference. Upper.

**Sound.** By Marian E. Baer. Holiday House, Inc., New York. 1952. 125 pages. Nearly fifty observations of and experiments with vibrating objects are arranged from the simple (placing an ear against a radio cabinet) to the more complex (making a simple one-string instrument). The characteristics of sound are well illustrated by the use of common household materials and utensils to make such things as a tin-can telephone, a trombone bottle, a vibration motor, and similar sound devices. Primary, Intermediate.

**Things Around the House.** By Herbert S. Zim. William Morrow and Co., New York. 1954. 32 pages. The workings of some common household appliances—the electric light, the doorbell, the refrigerator, the toilet, the stove and the furnace—are presented in simple text and in illustration, for the elementary and intermediate reader. Following the description of each appliance is a more detailed explanation for advanced readers, or for teachers or parents to read aloud. Primary, Intermediate.

**Tommy Learns to Fly.** By John Lewellen. Thomas Y. Crowell Co., New York. 1956. Unpaged. Tommy, the author's son, accompanies his father on several airplane flights and gradually learns how to fly the family airplane. The story is well written and well illustrated—nicely aimed at the group for which it is intended. The language is simple and clear. The sketches are excellent supplements to the text. Primary, Intermediate.

**The True Book of Toys at Work.** By John Lewellen. Children's Press, Chicago. 1953. 43 pages. Friction, wheels, simple electric circuits, devices that increase "power", simple musical toys, and electric trains are the subjects of this book. The first section on wheels and friction is particularly well done. In later sections, explanations are not so simple and well-defined, although the entire book is useful in helping to explain to children the how and why of some of their common toys. Primary, Intermediate.

**What's Inside of Engines?** By Herbert S. Zim. William Morrow and Co., New York. 1953. 32 pages. Steam engines, internal combustion engines, and an atomic pile are illustrated in color and explained for the beginning reader. One page of illustration and one of large-print text explain each type of engine. An additional page of information in smaller print can be read aloud, or can be used by more advanced readers. The writing is well done, but the oversimplification necessary for young readers may fail to provide many of them with a real understanding of how engines work. Ages 6–10. Primary, Intermediate.

**All About Radio and Television.** By Jack Gould. Random House, Inc., New York. 1953. 139 pages. In simple words and analogies the function

## Physical and Chemical Forces and Their Applications

**I Know a Magic House.** By Julius Schwartz. McGraw-Hill Book Co., Inc., New York. 1956. 32 pages. The scientific magic of our homes is delightfully presented for youngsters by text and colored pictures. The magic of a house is in the music that comes from black circles (record player), the wheel that you can spin to find a friend (the telephone), the fire that warms even though it is in another room (the furnace), and others. Here is science that will delight the young reader. Primary.

**Mickey's Magnet.** By Franklyn M. Branley and Eleanor K. Vaughan. Thomas Y. Crowell Co., New York. 1956. Unpaged. Mickey spills a box of pins on the floor and finds that a magnet will pick them up. He also learns that a magnet will pick up some metals, but not all, and that he himself can make a magnet. With his home-made magnet he runs merrily about the house seeking new discoveries. Primary.

**The True Book of Science Experiments.** By Illa Podendorf. Children's Press, Chicago. 1954. 47 pages. Simple experiments with air, magnets, gravity, water, sound, and heat and cold are presented in this easy-to-read little book. Easy-to-get materials are emphasized and graphic drawings in black and white or in color, by Mary Salem, help to show primary children how to discover for themselves the scientific truths listed in the final pages. Primary.

**It's Fun to Know Why.** By Julius Schwartz. McGraw-Hill Book Co., Inc., New York. 1952. 121 pages. These simple home experiments are designed to help the young reader understand more about iron, coal, cement, glass, rubber, wool, salt, bread, soap and paper. Each experiment is preceded and followed by further explanation and a few thought-provoking questions. For the most part the activities involve easily obtainable materials. They are freely illustrated with black and white sketches. Only modest skill is necessary for the success of the activities. Primary, Intermediate.

**The Mighty Atom.** By John Lewellen. Alfred A. Knopf, Inc., New York. 1955. 59 pages. Everything you can see (even you) is made up of atoms, so it is well to know something about them. They are likened to a tiny, tiny earth-and-sun system, so tiny that if each person in the world were an atom all the people in the world could fit on the head of a pin and have plenty of room left over. "The Mighty Atom" is described, and a simple introduction to the nucleus and what it can do follows. Explanations of atom structure are confined to small, light atoms (carbon or below in atomic number). Primary, Intermediate.

ing glass are used in simple experiments to illustrate the basic principles of sound production. Musical sounds are described, together with the machines that record them. Finally, there is an interesting section on the production of sounds for radio and television. Crumpled cellophane sounds like a frying egg; a suspended sheet of tin simulates thunder; and a set of wooden blocks can imitate marching feet. Intermediate.

**Man and His Tools.** By William A. Burns. McGraw-Hill Book Co., Inc., New York. 1956. 155 pages. This is the story of how many of our modern tools and mechanical "gadgets" were developed down through the years. The stone hammer of early man underwent many changes before it became today's claw hammer. The coarse cutting edge of a flint knife was replaced by bronze, and this gave way to iron and steel. Today's knives have a fascinating history. Included in this book are the histories of pounding, cutting, sawing, and boring tools, as well as the development of fasteners, lifters, wheels, transportation media, and means of starting a fire. Freely illustrated with sketches by Paula Hutchison, the story of tools and how they evolved is both entertaining and informative. Intermediate.

**More Experiments in Science.** By Nelson F. Beeler and Franklyn M. Branley. Thomas Y. Crowell Co., New York. 1950. 169 pages. A collection of science activities that can be done, for the most part, with common home materials such as glass jars, kitchen chemicals, nails, rubber bands, cardboard and baking pans. Included are directions for making such things as a simple fire extinguisher, a stethoscope, a flower collection, a helicopter, a turbine, and a telegraph sounder. There are also simple directions for finding latitude and longitude, experimenting with plants, air, oxidation, and making paper. Language is simple, and explanations, for the most part, are correct. Intermediate.

**Wings in Your Future.** By Leo Schneider and Maurice Ames. Harcourt, Brace & Co., Inc., New York. 1955. 146 pages. The authors use simple home experiments with paper, water, balloons and pans to show how airplanes get into the air, and how they are controlled when they are aloft. There is a section on jet engines and one on helicopters, gliders, and sailplanes. The last half of the book is a behind-the-scenes description of a large city airport, and a DC-7 flight from New York to Chicago. The text is smoothly written, the illustrations are clear, and the activities are, for the most part, completely practical. Intermediate.

**Your Telephone and How It Works.** By Herman and Nina Schneider. McGraw-Hill Book Co., Inc., New York. 1952. 94 pages. When you pick up the receiver and dial a number, you initiate an amazing series of events. This is the story of what goes on in the transmitter, the telephone

of a radio set is explained, using first the simple "foxhole radio", consisting of a razor blade, a coil of wire, and a set of earphones. Vacuum tubes and their significance are explained, followed by a simplified presentation of television (its operation, transmission, and special uses). Also included are an explanation of long- and short-wave radio transmission, and the role of the F.C.C. in regulating the "air-waves". A clear and easy approach to radio and TV for the beginner. Intermediate.

**Everyday Machines and How They Work.** By Herman Schneider. McGraw-Hill Book Co., Inc., New York. 1950. 186 pages. For the pupil (or the teacher) who wishes to learn about the mechanical devices around home and school, this book is excellent. It describes the construction and operation of such things as faucets, lights, musical instruments, washing machines, furnaces, tools, and even zippers. The text is simple and each item is sketched in line drawing. The moving parts of an everyday machine such as a washing machine are mysterious because they are hidden from view. This is a book of exploration and explanation of those bits of mechanical magic. Intermediate.

**Experiments with Electricity.** By Nelson F. Beeler and Franklyn M. Branley. Thomas Y. Crowell Co., New York. 1949. 139 pages. Twenty-five practical and safe activities, fully described and illustrated, include how to make a buzzer, a signaler, a secret magnetic lock, an electric motor, and several tricks. The materials needed for most of these activities are dry cells, wire, paper clips, rubber bands, scraps of wood and metal, and some simple tools. Intermediate.

**The First Book of Electricity.** By Sam and Beryl Epstein. Franklin Watts, Inc., New York. 1953. 68 pages. This is the story of how electricity is generated and sent through power lines into our homes to operate the lights, toaster, iron and vacuum cleaner. There are also simple descriptions of house wiring, fuses, and the electric meter. Several pages are devoted to directions for making simple circuits, and an electromagnet, a telegraph sounder, and a simple fuse. Intermediate.

**Fun with Science.** By Mae and Ira Freeman. Random House, Inc., New York. 1956. 64 pages. Here are several "stunts" that a child can do in his own home with such things as string, a cork, a pop bottle, some nails, bits of wire, a flashlight cell or two, and some rubber bands. Each activity is designed to illustrate a scientific principle that is explained in non-technical language. The text, together with the accompanying illustrations, make the book an easy one for interested school children to use. Intermediate.

**The Magic of Sound.** By Larry Kettelkamp. William Morrow and Co., New York. 1956. 64 pages. String, paper cups, a soda straw, and a drink-

relationships. Finally, the energy potential of the nucleus is examined in the light of what was known in 1951. Intermediate, Upper.

**Atoms Today and Tomorrow.** By Margaret O. Hyde. McGraw-Hill Book Co., Inc., New York. 1955. 140 pages. A brief description of atom smashing and the production of radioactive isotopes precedes an interesting account of the uses of radioactive isotopes as tracers in medicine, agriculture and industry; the use of atomic energy for electrical power; and the new role of the atom as a power source for transportation media. This is a non-technical approach to peacetime uses of atomic energy. Intermediate, Upper.

**Birds and Planes: How They Fly.** By John Lewellen. Thomas Y. Crowell Co., New York. 1953. 130 pages. The mechanism responsible for the flight of both birds and airplanes is simply and accurately described and explained in text and line illustrations. A major portion of the book is devoted to wings, their structure, their function, and their modification into propellors. Air currents and how birds and planes use them, Bernoulli's effect on an airfoil, the uses of flaps, ailerons and elevators, and their counterparts in bird flight are interesting subjects to one who has watched and wondered about the physics of flight. In this book a reader will learn the meaning of the mechanisms. Intermediate, Upper.

**Experiments in Chemistry.** By Nelson F. Beeler and Franklyn M. Branley. Thomas Y. Crowell Co., New York. 1952. 147 pages. The home kitchen is a laboratory for many simple experiments involving common household chemicals and apparatus. These experiments help to explain the basic chemistry of fermentation, preservation in brine, electrolytic cleaning of silver, starch and fat extraction, candy-making, corrosion, bleaching, dyes and inks, and many others. Some chemicals such as carbon tetrachloride may be dangerous to use in a closed room, and should be used only in fresh air. The materials to be used for these experiments are easy to obtain, and the instructions for their use are clear and non-technical. Intermediate, Upper.

**First Chemistry Book for Boys and Girls.** By Alfred Morgan. Charles Scribner's Sons, New York. 1950. 172 pages. The kitchen and the corner drugstore can supply all the necessary equipment and chemicals for these 64 simple experiments. They include the chemical properties of water, the chemistry of combustion, foods, the reactions of acids and bases, and the chemistry of photography. Each experiment outlines the chemistry involved, the things needed, and the directions for working. Intermediate, Upper.

**Fun with Your Camera.** By Mae and Ira Freeman. Random House, Inc., New York. 1955. 55 pages. After a concise explanation of how a

exchange, and the receiver, either at home or in a pay station. Travelling telephones—those used in planes, trains, and police cars—are still another application of the home telephone combined with radio. Telephoning your friends has an added thrill when you know what happens in the telephone. Intermediate.

**All About Rockets and Jets.** By Fletcher Pratt. Random House, Inc., New York. 1955. 135 pages. The rocket, invented by the Chinese, has a long and colorful history. Its principal use has been to deliver high explosives to a distant target in wartime. World War II saw more rockets developed and used than most persons realize. The German V-2, the buzz-bomb, and the American bazooka emerged as the most successful prototypes of today's self-propelled projectiles. The newer rockets and jets are so vastly superior to these earlier ones that they may soon pioneer in extra-terrestrial exploration. A readable, interesting, and well-illustrated book. Intermediate, Upper.

**All About the Wonders of Chemistry.** By Ira M. Freeman. Random House, Inc., New York. 1954. 144 pages. This is an informative rather than an activity book. The valence of atoms, and how atoms combine to make simple compounds introduce a large section on organic chemistry, the chemistry of carbon compounds. The refinement of metals and the production of alloys; fuels and the cracking process; new and important researches in biochemistry and antibiotics; and the amazing chemistry of fibers and plastics are all given considerable attention and explanation. It is a good survey book for the student with an avid interest in chemistry. Intermediate, Upper.

**The Atomic Submarine.** By John Lewellen. Thomas Y. Crowell Co., New York. 1954. 127 pages. Fifty years stood between Robert Fulton's dream of an underwater boat, and the first successful submarine attack during the Revolutionary War. World Wars I and II proved the importance of an underwater fleet to harass the enemy. In the Nautilus, the first U.S. atom-powered submarine, a few ounces of fuel can send the ship completely around the world underwater. The Nautilus' steam turbines, atomic reactor, and general design are well described. Other phases of her design that are described in some detail are battery charging, air-conditioning, missile launching, and navigation apparatus. Intermediate, Upper.

**Atoms at Work.** By George P. Bischof. Harcourt, Brace & Co., Inc., New York. 1951. 130 pages. The biggest things in the universe have their littlest counterparts. Just as there is a sun and planets, so there are nuclei and planetary electrons. The physical and chemical nature of molecules, ions and atoms is presented simply, with an emphasis on electro-chemical

**Science Experiences.** Elementary School. By Bertha M. Parker. Row, Peterson and Co., New York. 1952. 272 pages. Here are 180 simple experiments in physics, chemistry and astronomy, and with living things. Some experiments can be done with common materials from around home. Others require simple apparatus found in most larger schools. Each experiment is followed by a brief explanation of why it worked the way it did. The explanations, directions, and diagrams are clear and easily followed. Although written for teachers, the text is simple enough for most intermediate and upper-grade children. Intermediate, Upper.

**The Story of Power.** By Edward Stoddard. Garden City Books, New York. 1956. 64 pages. Animal muscles have only recently been replaced by machines to do our work. First, running water and wind were harnessed to turn wheels. Later, the steam engine was invented. This was followed by the internal combustion engines—both gasoline and diesel. These engines revolutionized American transportation and industry and paved the way for the development of jet engines and rockets. Finally, atomic power became a reality. With picture and story, this book presents a fascinating account of the development of power. It is clear, accurate, and beautifully illustrated. Intermediate, Upper.

**Your World in Motion.** By George Barrow. Harcourt, Brace & Co., New York. 1956. 175 pages. The seen and the unseen motions that affect the earth and its inhabitants include the movements of air, water, light, electricity, and atomic radiation. Everyday machines and everyday experiences provide sufficient background for the upper-grade reader to understand the text. In spite of occasional errors, the book is simple and well-written, particularly in its description of the motion of vibrations. The bulk of the book is devoted to heat, light and sound. Only one chapter deals with atomics. Intermediate, Upper.

**What Makes the Wheels Go Round.** By Edward G. Huey. Harcourt, Brace & Co., New York. 1952. 167 pages. (Revised edition.) The phenomena of forces, light, heat, electricity, magnetism, some simple machines, gravity, and the structure of matter are presented in clear, simple, understandable form for the interested youngster. This book is an excellent introduction to physics for the child with little background. The text is so clear that the few illustrations are almost unnecessary. Intermediate, Upper.

**All About the Atom.** By Ira M. Freeman. Random House, Inc., New York. 1955. 140 pages. In their study of matter and energy, scientists have found that within the smallest bits of matter (atoms) lie fantastic amounts of energy. The unlocking of this energy has been a long and often puzzling process. *All About the Atom* explains some of the basic

camera works, there follow several illustrated sections on how to take good pictures. Lighting, composition, trick photography, and how to avoid the common errors in picture-taking are discussed and illustrated by the authors, both of whom are accomplished photographers. A handy guide for the new camera owner. Intermediate, Upper.

**Helicopters: How They Work.** By John Lewellen. Thomas Y. Crowell Co., New York. 1954. 129 pages. The advantages of a helicopter over a fixed-wing airplane are described by a thrilling account of a helicopter ride in freezing fog. The evolution of such a rotary-wing airplane was not without some disappointment and failure. Sikorsky finally perfected a "whirly-bird" which led to the many war-tested helicopters that are still used in rescue operations, police work, and agriculture. There is much historical as well as technical information in this book. Intermediate, Upper.

**Our Friend the Atom.** By Heinz Haber. Simon & Schuster, Inc., New York. 1956. 161 pages. The power within the atom is likened to the Fisherman's Genie of Arabian Nights fame. Freed, it has the power of total destruction. Controlled, it is an invaluable tool for scientific research. The fascinating history of atomic exploration, what is being done to tap the energy within its nucleus, and some of the uses of such energy are delightfully and accurately recorded in this thorough, but not too technical, presentation of Walt Disney's story of the atom. Intermediate, Upper.

**Photography.** By Herbert S. Zim and R. Will Burnett. Simon & Schuster, Inc., New York. 1956. 155 pages. A handbook on photography for the serious amateur. Here are suggestions for loading and using a camera, for lighting the subject, for developing and printing the pictures, and a host of special subjects such as the use of filters, props, and supplementary lights. The book is freely illustrated with pictures, both in black and white and in color, most of which exemplify the technique being described. Valuable tips on composition and effectiveness of subject make it a guide worth having and using. Intermediate, Upper.

**The Real Book of Electronics.** By Edward Stoddard. Garden City Books, New York. 1956. 212 pages. In fairly simple terms the workings of radio, television, radar, X-rays, sonar, and many other electronic wonders are explained. Principles of operation, rather than details of construction, are emphasized. The practical applications of electronics to industry include such things as quality controls in manufacturing, guiding aircraft into airports, sorting oranges, cracking walnuts, treating sore muscles, computing complex equations, and even cooking foods at high speed. Intermediate, Upper.

structures of the atom, and follows this with brief but simple explanations of fission and fusion, and their applications. Most of the book deals with the structure and properties of the atom as a background for understanding what man has done with the atom. Upper.

**Atomic Experiments for Boys.** By Raymond F. Yates. Harper & Bros., New York. 1952. 132 pages. Simple experiments with electricity and magnetism introduce further experiments with charged particles and radioactivity. Illustrated instructions are given for making a goldleaf electroscope, a spinthariscope (for viewing radioactive flashes), a Wilson cloud chamber, and a Geiger-Mueller counter. Added explanations include those of the atomic pile, the principle of atomic and thermonuclear bombs, and atomic power. The book is too concise for an introduction to atomics, but it is valuable for its activity suggestions. For advanced readers. Upper.

**Experiments with Atomics.** By Nelson F. Beeler and Franklyn M. Branley. Thomas Y. Crowell Co., New York. 1954. 156 pages. The experiments described in this book include taking pictures by means of luminous dial watches, making a cloud chamber, and separating steel balls of varying weights by means of a magnet. Suggested activities include models of various atoms and isotopes, and scale models of nuclear reactors. Much information is packed into the book—too much for the average upper-grader, but enough to stimulate the informed student. Explanations are clear, and the activities and experiments are good supplements to the text. Upper.

**Explaining the Atom.** By Selig Hecht. The Viking Press, New York. 1955. 226 pages. An amazingly clear and accurate explanation of the researches that led to the first successful self-sustained nuclear reaction. The language of the text, and the physics and chemistry contained in it, are suitable for advanced readers only, but for these and higher-grade pupils and teachers a more comprehensive, yet simple treatment is hard to find. Several chapters have been added, and the book revised, since its first edition in 1946. Upper.

**The Tenth Wonder—Atomic Energy.** By Carleton Pearl. Little, Brown & Co., Boston. 1956. 124 pages. This is the story, simply told, of how man has probed the secrets of the atom—first by chemical means, and later by means of neutron "bullets". It is the story behind the search for radioactive materials, the first fission of a uranium nucleus, the refinement of U-235, and Fermi's historic self-sustaining chain reaction. Finally, it gives a view of atomic-powered machines and the role of radioactive isotopes in medicine, industry and agriculture. Upper.